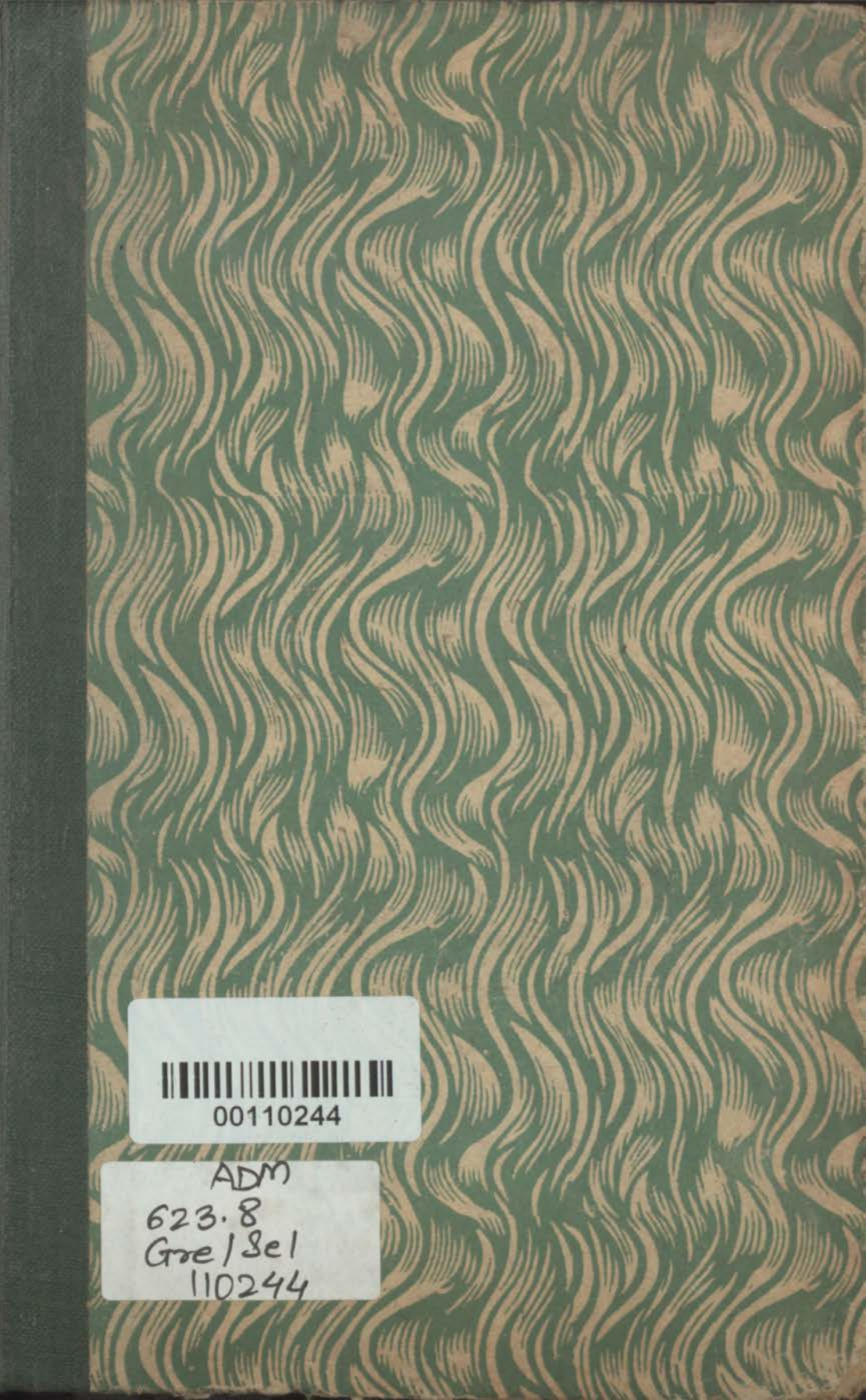
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Martis, 20° *die Maii*, 1851.

MEMBERS PRESENT:

Viscount JOCELYN in the Chair.

Mr. Chancellor of the Exchequer.	Mr. Willcox.
Mr. H. Currie.	Admiral Bowles.
Mr. Divett.	Mr. Corry.
Mr. Wm. Cowper.	Mr. H. Berkeley.
Mr. Scott.	Sir James Hogg.
Mr. J. Wilson.	Mr. Mangles.

Mr. *Yates*, *T. Lloyd*, esq., Captain *Watts*, Captain *George Hyde*, Captain *Low*, esq., Mr. *Anderson*, M. P., examined.

[Adjourned till Thursday, at half-past Twelve o'clock.

Jovis, 22° *die Maii*, 1851.

MEMBERS PRESENT:

Viscount JOCELYN in the Chair.

Mr. Divett.	Mr. Hope.
Mr. Corry.	Mr. Willcox.
Mr. Henry Berkeley.	Mr. Plowden.
Admiral Bowles.	Mr. Mangles.
Mr. Bright.	Mr. Cowper.
Mr. J. Wilson.	Mr. E. B. Sturley.
The Chancellor of the Exchequer.	Sir James Hogg.
Lord Naas.	Mr. Scott.

Captain *Matthew*, Mr. *Anderson*, M. P., Mr. *Morgan*, Mr. *Miller*, Mr. *Yates*, examined.

[Adjourned till Tuesday, at One o'clock.

Martis, 27° die Maii, 1851.

MEMBERS PRESENT:

Viscount JOCELYN in the Chair.

Admiral Bowles.	Mr. J. Wilson.
Sir James Hogg.	Mr. Plowden.
Mr. Willcox.	Mr. Mangles.
Mr. Divett.	Mr. Corry.
Mr. Chancellor of the Exchequer.	Mr. H. Currie.
Mr. William Cowper.	Mr. H. Berkeley.
Mr. Bright.	Mr. E. H. Stanley.
	Mr. Scott.

Committee deliberate, and a Draft Report, proposed by the Chairman, was ordered to be printed.

[Adjourned till Monday next, at Twelve o'clock.

Lunæ, 2° die Junii, 1851.

MEMBERS PRESENT:

Viscount JOCELYN in the Chair.

Mr. E. H. Stanley.	Lord Naas.
Mr. Chancellor of the Exchequer.	Mr. Plowden.
Mr. Scott.	Mr. Willcox.
Mr. Corry.	Mr. Divett.
Mr. H. Currie.	Mr. Mangles.
Mr. J. Wilson.	Mr. Bright.
Mr. H. Berkeley.	Admiral Bowles.
Sir James Hogg.	Mr. Wm. Cowper.

Draft Report proposed by the Chairman read a first time, as follows:

"Your Committee, in considering the best mode of carrying out the inquiry submitted to them by Your Honourable House, were led to believe that it would give the most general satisfaction to enter, first, upon the question of the different routes by which it has been proposed to connect, by means of Steam Communication, the Australian Colonies with the Mother Country, in order to come, at as early a period as possible, to some definite conclusion as to the respective

merits of these lines; leaving for subsequent consideration the other matters included in the Order of Reference.

"Your Committee have adopted this course, believing that the information furnished by the Witnesses who have appeared before them may materially facilitate the efforts of the Government in making the arrangements necessary for effecting that important communication.

"With this object, Your Committee have examined Witnesses of different views, and representing various interests.

"They first called for Evidence from persons connected with, and long resident in, the Colonies of Australia, who, they have a right to believe, were acquainted with the wants and wishes of the Colonists; and others whose commercial transactions with the Colonies, and whose knowledge of the imperial considerations involved in the question, rendered their opinions of value.

"They have likewise taken the Evidence of Officers in Her Majesty's Naval Service, as well as Commanders and Owners of Vessels in the Mercantile Marine, who have practical acquaintance with the navigation of the seas proposed to be traversed by the vessels of the Companies tendering for the different routes.

"Without entering at length into scientific details, as regards the comparative merits of the Screw and Paddle, when applied to Steamers intended for ocean voyages, Your Committee were of opinion that as two of the lines for which tenders have been sent in, proposed to effect the communication by means of auxiliary Screw Steamers, it was their duty to take the Evidence of practical men, as to the probability that vessels so propelled, would be able, under all circumstances, to perform with sufficient punctuality the services for which they were tendered.

"The question, it appears to Your Committee, involves the following considerations:

"1. Expedition and certainty, as adapted to Postal purposes.

"2. Expedition, accommodation, and economy in the conveyance of Passengers.

"3. Facility, accommodation, and cheapness, as adapted to the peculiar kind of Merchandize passing between England and Australia.

"That the line or lines selected should be as free as possible from those Political Objections which necessarily attach to a line dependent on other countries for its communications.

"There are Three Routes proposed by which this communication may be established:

"1. The Panama Route: A line of Auxiliary Screw Steamers belonging to the Pacific Steam Packet Company, in connexion with the already established line, called the Royal Mail Steam Packet Company, from a Channel port to Chagres, or Navy. Bay, in the Gulph

Gulph of Mexico; across the Isthmus of Panama, by means of a Railway, as described in process of construction, by an American Company, and thence from Panama *viâ* Tahiti and New Zealand to Sydney.

"2. The Cape Route: A line of Auxiliary Screw Steamers from a Channel port round the Cape of Good Hope, either by an extension of the existing line to the Cape, or a separate line throughout, not touching, on the outward passage, at that Colony, but calling off Port Phillip, making Sydney the terminus, and from the former port it is contemplated to run branch steamers to Swan River, Van Diemen's Land and New Zealand.

"3. The Indian Route: A line following the present Overland Mail Route, from a Channel port *viâ* Alexandria, Suez, Aden, to Point de Galle;—From Point de Galle there are three proposed modes of reaching Australia:

"1st. From Point de Galle to Singapore, and then *viâ* Torres Straits to Sydney.

"2d. From Point de Galle direct to the West Coast of Australia, reaching Sydney *viâ* Swan River and Port Phillip.

"3d. From Point de Galle *viâ* the Straits of Sunda, Batavia, the West Coast of Australia and Swan River.

"It is in evidence before Your Committee that the average number of days now occupied in the voyage from England to Sydney by the Cape of Good Hope is 119, and from Sydney to England 138; and upon this basis the course of post between England and Australia may be stated at present at 257 days, or eight months. *Vide* Evidence, Lambert, 756. Wheeler, 481.

The Pacific Steam Packet Company engage to perform the distance from England to Sydney, by the Panama Line, in Screw Steamers of 1,000 tons, and 200-horse power, in 62 days and some hours, at an average rate of nine knots the hour; and allowing, as they propose, eight * days at Sydney for the reply to letters, the current of post would be reduced to 133 days. *Vide* App. Tender, 13 Feb. 1851. No. 19. Just, 1709.

"The General Screw Steam Navigation Company propose to perform the service from England to Sydney, by the Cape Route, in auxiliary Screw Steamers of 1,400 or 1,700 tons, with 250 or 300-horse power, at an average rate of 8½ knots the hour; they engage to perform the outward passage in 64 days, and the homeward in 68; and allowing, as they propose, three days for the reply to the letters, the current of post by this line would be reduced to 135 days. *Vide* App. No. 8.

"The same Company have made an offer to effect the communication, by extending the existing line to the Cape of Good Hope on to Port Phillip; it appears that in such an arrangement six additional days must be allowed for the outward passage.

"The Witnesses who gave Evidence for the Eastern Steam Navigation Company, propose to perform the service *viâ* Trieste and Singapore *Vide* Evidence, Yates, 2566 to 2588.

* The stoppage at Sydney should have been stated to be 11 days

gapore in 53 days, in Paddle Steamers, of 1,200 tons burden, with 400-horse power; and allowing three days for the reply to letters at Sydney, it would reduce the current of post to 109 days.

Vide Evidence, Anderson, 3563 to 3566.

"The Peninsular and Oriental Company state their readiness to undertake the service *viâ* Marseilles, Alexandria, and Singapore, but without mentioning the class of vessels they propose to employ. The service, as in the offer of the former Company, to be performed at the rate of 10½ knots the hour; the outward passage to be made in 52 days, and the homeward in 55; allowing, according to their proposal, five days for the reply to letters, the current of post would be reduced to 112 days.

"It is proper to remark, in reference to the expectations held out by the two last Companies, as to the time in which this communication may be maintained, that in order to effect the object proposed, the speed must be greatly increased beyond that which is at present maintained along a great portion of the proposed routes.

"From the Evidence taken on this inquiry, Your Committee are not prepared to admit that any one of these routes have any very decided advantage over the other in distance or in time; it is not merely the mileage which is to be considered, but the effects of winds, currents, monsoons, and seasons, which must be taken into account.

"In reference to the nautical questions which came before Your Committee, and upon which they called for the opinions of practical seamen, they were anxious to elicit facts relative to the navigation of Torres Straits, the navigation of the Australian Coast in the region of Cape Leeuwin, and the practicability of performing with regularity the homeward voyage from Sydney to the Cape of Good Hope in vessels to which the Auxiliary Screw Propeller is proposed to be applied.

Vide Evidence, Stirling, 216 to 227; Moore, 1066 to 1076; Blackwood, 1251 to 1288; Yule, 1450 to 1471; Fitzroy, 1540; Doutty, 2282 to 2285.

"As regards the first of these, Your Committee have had in evidence from several eminent naval officers, who are practically conversant with the navigation of Torres Straits and of the neighbouring seas, that dangers and difficulties abound; and although the admirable surveys of the scientific officers employed under the direction of the Admiralty, have done much to render that passage less hazardous than formerly, Your Committee, nevertheless, do not feel justified in recommending it as a regular route for steam-vessels carrying mails, passengers, and cargo, running day and night, and bound under heavy penalties to perform the service in a given time.

"With reference to the navigation of the Australian Coast, in the region of Cape Leeuwin, it does not appear to Your Committee, from the Evidence laid before them, that the difficulties, owing to the severe gales said to last for many months of the year in that region, are more severe than those encountered about the same latitudes in other parts of the world, or that they are such as a well-found steam-vessel, of adequate tonnage and power, may not successfully contend against.

"This

"This observation applies more especially to the return voyage from Sydney *viâ* Cape Leeuwin; the practicability of which, at certain periods of the year, with adequate regularity, some of the Witnesses have questioned.

Vide Evidence, Moore, 1111 to 1113; Blackwood, 1314; Doutty, 2276; Hyde, 3148 to 3165; Lane, 3233 to 3241.

"With reference to the introduction of the Screw Propeller to Steamers intended for ocean voyages, there seems to be a general agreement that either as an auxiliary or principal motive power, it has been eminently successful; and that when used as an auxiliary, it is singularly well adapted for vessels combining the carriage of mails, passengers, and cargo on long voyages; while at the same time it is the most economical mode in which steam may be applied to effect a rapid communication.

"From the Evidence taken before your Committee, it appears that the Screw itself, and the machinery connected with it, is in a state of rapid improvement.

"The discussions which took place in the Australian colonies on steam communication with England seem to have had reference to the question generally, rather than to the advantages of any one line as compared with another. The votes of certain sums of money by the Legislative Councils at Sydney and Adelaide seem, in a great measure, governed by local consideration. At Sydney, more especially, where the sum of 6,000 *l.* was voted by the Legislative Council for the Torres Straits Passage, it was admitted by one of the Witnesses that the object of that vote was to secure to Sydney the main Australian terminus of the Mail Line.

Vide Evidence, Bogue, 655 to 657, 682 to 689; Forster, 320, 390; Parbury, 821-3, 829.

"The questions of the navigation of Torres Straits and the passage by Cape Leeuwin; of the return voyage to the Cape of Good Hope; and of the employment of Screw Steamers, being settled, the consideration of the relative merits of the Three Routes is very much simplified, and may be viewed with advantage, in reference to the Four fundamental conditions laid down in the commencement of this Report.

"1. As regards expedition, certainty, and extent of Postal communication:

"Although it does not appear from the Evidence that any one of these lines has any advantage over the others in these respects, of so decided a character as to lead the Committee to adopt it solely on that ground, the Committee are led to believe that the direct line from Point de Galle to Swan River would be the most expeditious that could be established; and of the three lines for which tenders have been sent in, that from Point de Galle *viâ* Singapore, Batavia, and Cape Leeuwin, promises a greater security for rapid and certain postal communication with England than either the route by Panama or the Cape of Good Hope; this, however, must depend, as has already been remarked, upon the speed being greatly increased beyond that at which the service is at present conducted from England to Singapore, and it is hardly necessary to observe that no such increase could be effected without a corresponding augmentation of expenditure.

Vide Evidence, Lloyd, 2983; Anderson, 3344.

"In

"In regard to the Panama route, Your Committee beliave that its promoters have not overstated the punctuality or facility with which they would be enabled to maintain a postal communication within the period they offer for the service.

Fitzroy, 1603; Blackwood, 1323; Fitzroy, 1550, 1559, 1563, 1564; Hyde, 3147 to 3149, 3158, 3173, 3177; Lane, 3233 to 3241. 3247.

"In respect to the Cape Line, it seems not impossible that there may be a degree of uncertainty at first, extending to six or seven days, in the arrival of the Homeward mails from Sydney. This uncertainty would arise from the navigation of the Indian Seas westward. At the same time it is to be remembered that the experiment of navigating that ocean in a well-found Screw Steamer has not yet been tried; while from the Evidence which we have from masters of sailing ships, who have made the passage at all seasons of the year, it appears that there can be little doubt of the steamers contemplated for this service maintaining their engagements.

"2. As regards expedition, accommodation and economy in the conveyance of Passengers:

"It will no doubt be admitted, that expedition for passenger purposes is of not so great importance as where postal arrangements are alone to be considered; but, at the same time, as has already been shown, any one of these lines offers nearly equal advantage in this respect.

"In point of accommodation, the Panama Line promises a tranquil and regular passage across the Pacific Ocean, the Trade winds securing regularity both on the outward and homeward route; the inconvenience to which the passenger would be subject being the transit across the Isthmus of Panama, including the trouble and difficulty attendant on the transhipment of heavy baggage in a tropical climate, at certain periods of the year of a most unhealthy character. Though this inconvenience will not be wholly removed, it will be materially diminished when the railroad, which Your Committee have every reason to believe is in the course of construction between Navy Bay and Panama, shall be completed.

Vide Evidence, Just. 1694 to 1697.

Just, 1702.

"By this line it is contemplated to carry first class and intermediate passengers, at the cost of 105*l.* for the first class, and 60*l.** for the intermediate.

"The Cape Line offers to the passenger the advantage of the only direct communication between England and the colonies of Australia, without any change of vessel, through a climate comparatively free from the tropical heats of the other two routes.

"It is true that by this line, at certain periods of the year, some inconvenience may be experienced from the severe weather common to the latitudes to be traversed, but there is no reason to believe that this inconvenience will be as great as that to which passengers by the North American steamers are annually liable in the winter months.

Vide Evidence, Fitzroy, 2174.

"By this line, the Company state their ability to carry first-class, intermediate and steerage passengers, at the same rates as those charged

* The charge for intermediate passengers should have been stated to be 50*l.*

charged by sailing vessels; namely, 70*l.* first class, 30*l.* second class, and 12*l.* steerage passengers;—the latter being the charge at which emigrants are at present conveyed from England to Australia.

"By the Indian Line, the communication may be somewhat more rapid than by either of the two other routes; but the inconvenience of three transhipments, of the tropical heats, continued during a much longer period than by the Cape route would be the case, together with the certainty of crowded vessels, at certain seasons of the year, along those portions of the line traversed by the India and China passengers, render it, as an Australian route, the least preferable, in point of comfort.

"If any inference can be drawn from the charges now made for the conveyance of first-class passengers as far as Singapore, to which class this service would be confined, and likewise from the evidence which has been given on the part of the Eastern Steam Navigation Company, Your Committee are led to believe they would be considerably higher than by either of the other two lines; indeed, it has been admitted by Witnesses, even those most favourable to this route for postal purposes, that few persons would be able to avail themselves of the more rapid communication it would afford between England and Australia, it being certain that the majority would prefer the longer voyage in sailing vessels to incurring the cost which a passage by this line would require.

Yates, 2592, 2593; De Salis, 25. Parbury, 799; Dalgetty, 906; Wheeler, 422, 425; Lambert, 728, 732.

"3. Facility, accommodation and cheapness, as adapted to the peculiar kind of Merchandize passing between England and Sydney:

"It has been stated by the promoters of the Panama Line, that they calculate on little, if any, merchandize being conveyed by this route. It appears to Your Committee that the increasing traffic across the Pacific, between California and New Zealand, consists of articles not likely to be conveyed by these steamers; whilst the present cost for transit of merchandize across the Isthmus of Panama would preclude the transmission of any but the most valuable articles.

Vide Evidence, Just, 1736.

"The Cape Line, Your Committee are led to believe from the evidence they have received, is peculiarly adapted to the carriage of merchandize, of such a description as would bear a higher rate of freight in consideration of a proportionate increase of speed. The size of the vessels and their construction will enable them to devote a considerable portion of their tonnage to this object.

De Salis, 66, 72; Lambert, 736, 749; Parbury, 812, 819; Logan, 1216, 1248, 1250; Low, 2060.

"The inconvenience arising from transhipment on the Panama route, and which renders it inapplicable to the conveyance of merchandize, extends to a far greater degree to that by Singapore. Indeed it has been readily admitted, by the promoters of that line, that no goods are expected to be conveyed by the steamers between England and Australia.

"The trade between India and Australia cannot be said at present to be of any very great extent; and although with China and the Indian Archipelago there is a considerable and increasing traffic in teas, sugars, and other merchandize, it does not seem to Your Committee

De Salis, 37; Lambert, 749.

mittee that the transport of such merchandize would be aided very materially by means of steam communication, or that it would bear the cost of transhipment at Singapore.

"4. That the line or lines selected should be as free as possible from those political objections which necessarily attach to a line dependent on other countries for its communications:

"The only line before Your Committee wholly free from these objections, and entirely under the control of the Government, is that *viâ* the Cape of Good Hope, the safety of which depends exclusively upon the maritime superiority of the empire; whilst the route across the Isthmus of Panama, and the routes through the heart of Europe and Egypt, must always be liable to the interruption consequent upon a breach of friendly relations with foreign powers.

"As regards the expense to the public necessary for the maintenance of these several lines, it appears to Your Committee, on reference to the tenders and to the evidence, that the Panama route would require for its establishment to Sydney alone, a grant of 50,000*l.* in addition to that already paid for that portion of the line conducted by the Royal Mail Steam Packet Company. To effect the extension of the Cape route, including the cost for intercolonial communication, about 39,000*l.* would be required, in addition to the sum already granted to the General Screw Company for the present line as far as the Cape of Good Hope: whilst from comparing the different proposals which have been made for extending the Indian line from Singapore to Sydney, it appears that for the establishment of that line, the public would be called upon to contribute a sum of not less than 60,000*l.*

Vide Tenders, 13 Feb. 1851.

Tenders, 22 Jan. 1850, 20 Mar. 1851. *Note.*— Calculation made on the Tenders for the portion of line proposed to be extended from the Cape of Good Hope. App. Tenders, 2 Nov. 1848, 13 Feb. 1851.

"It is possible that this line might be carried out at less cost were the screw propeller to be substituted in lieu of the full-power paddle; but in such an arrangement, the main argument in favour of this line would be weakened, as it would then become impossible to obtain with any certainty that punctuality and rapidity necessary to ensure the perfect combination at Singapore, and render it complete as a postal line.

"In referring to the tenders which have been sent in by the various parties who have proposed to undertake these lines, Your Committee have regarded them merely as means of pointing out with distinctness what might be effected upon each route; they consider that it is a question for the decision of Government, whether, after the Evidence which has been taken, it would not be advisable, and a fairer course to the public, to call for fresh tenders for the line which may be selected.

"In the selection of a line to recommend to the attention of the Government, Your Committee consider that there are objects essential to the welfare of the Colonies quite as important as those political considerations which, in other cases (such as India), render rapidity of Postal Communication the paramount object.

"Your

"Your Committee believe that, with a view to the welfare of the Colonies, the pre-eminence of any one of the requisites which they have laid down, is, on the whole, less important than a due combination of all.

"They do not consider themselves bound to give the preference to a route merely on account of its furnishing the most rapid means of Postal Communication; they believe, from the Evidence they have received, that there are other great interests involved in this question, affecting not less deeply the development of the rising Colonies of Australia, and the interests of the Empire generally.

"Your Committee, after maturely weighing the merits of the lines they have had before them, together with the objections which, in the course of this inquiry, have been urged against each, have come to the conclusion that the line proposed to be extended from the Cape of Good Hope to Sydney is the one which combines these advantages to the greatest extent, at the smallest cost to the public. They do not consider that the gain of six days, which it has been stated in evidence would be obtained by a direct line, not touching at the Cape on the Outward Passage, is of sufficient importance to justify them in recommending its present establishment; and with reference to an objection which might be taken on this point, they believe that the service might be performed in vessels of such a size as would meet the wants both of the Cape of Good Hope and the Australian Colonies.

"Looking at the prospect of remuneration which this line holds out to its promoters, and likewise at the great changes rapidly taking place in the requirements and commercial communications of those distant parts of the world, Your Committee would recommend that whatever arrangements may be entered into, should be for as short a period as possible, consistent with the adequate performance of the service.

"In arriving at these conclusions, Your Committee are not blind to the merits of the Panama Line; they believe that if at any future period, by the rapid march of science, and the application of capital, a water communication should be effected between the Atlantic and Pacific Oceans, that line must become the highway to those distant colonies; while, even at the present moment, it would afford a regular and sufficiently rapid Postal Communication, securing to the passenger a voyage comparatively free from storms, and at the same time it would bring the rising colony of New Zealand into the main line of communication.

"Neither have they overlooked the importance of the more rapid Postal Communication which they are led to believe the line *vid* the Straits of Singapore would afford; nor the advantage to the Australian Colonies of opening between Sydney or Adelaide Steam Communication with the Indian Archipelago. They consider that it has been satisfactorily proved, that, by the Cape, Postal Service may be conducted with sufficient regularity and rapidity to meet the present requirements of the colonies; that it would bring into direct communication

nication with each other the principal colonies of Australia; that it would furnish the most economical, and, at the same time, the least inconvenient means of transit to the passenger, including even the superior labouring classes in these advantages; that it would offer facilities for the transmission of merchandize at a moderate cost, without the inconvenience of transhipment; and that, independent of other nations, it would establish a line of communication between the mother country and her distant colonies, which might, in the case of any sudden emergency, be useful in keeping open the communication between England and her Empire in the East.

"Your Committee consider that it is unnecessary for them to enter into details as to the best mode of giving to the different colonies comprised in the Australian group the full advantages of such communication; the Evidence which they lay before The House will enable those to whom the arrangements may be entrusted to weigh fairly the respective interests of each; and in such arrangements Your Committee consider that those of New Zealand should certainly not be neglected.

"In reference to the establishment of Steam Communication between Singapore and Australia, Your Committee are prepared to view it as distinct from the question of direct communication with England, having reference to India and the trade of those seas; and whilst they fully admit the importance of that line, and believe that ere long the increasing requirements of Australia will demand its establishment, they are firm in the opinion that if one line alone is to receive the assistance of the Government, it is not at present of sufficient consideration to entitle it to be selected as the sole communication between England and Australia.

"Your Committee are induced to hope, from the Evidence they have received, that each colony will eventually, if necessary to do so, contribute to give full effect to the establishment of the intercolonial communication necessary to perfect these arrangements.

"The attention of Your Committee has been directed to the effect of payments for Contract Postal Packets on the interests of the general body of shipowners; and they think that the demand which they urge in the letter addressed by their Chairman to Your Committee, and which appears in the Appendix, is just and reasonable. Your Committee is of opinion that ample time should be given to encourage full competition; that the interval between the acceptance of any contract and the commencement of its performance should be sufficient to enable the contractor to prepare for the duty he has undertaken; and that the fullest scope possible, consistent with the due performance of the service, should be granted in respect to the conditions set forth for the tender.

Vide Letter addressed to the Chairman of the Committee, dated 13 April 1851.

"In conclusion, Your Committee earnestly press upon the Government the importance of taking immediate steps to effect the object to which this portion of their inquiry has been directed, more especially upon the ground of the ample time for preparation which they consider that the Public, in any tender for the service, are entitled to require,

require, so as to enable all competent parties to compete for the proposed service."

Motion made (Mr. *Bright*), "That the principle of the Draft Report submitted by the Chairman, so far as it gives a preference to the Cape line of communication between England and Australia, be adopted by the Committee." Question put. Committee divided:

Ayes, 11.	Noes, 5.
Mr. E. H. Stanley.	Mr. Chancellor of Exchequer.
Sir James Hogg.	Mr. William Cowper.
Lord Naas.	Mr. Divett.
Mr. Plowden.	Mr. Willcox.
Mr. Scott.	Mr. H. Berkeley.
Mr. Willcox.	
Mr. H. Currie.	
Mr. Mangles.	
Mr. Bright.	
Admiral Bowles.	
Mr. Corry.	

Question, "That the Draft Report be read a second time, paragraph by paragraph," put, and agreed to.

Paragraph beginning, "From the Evidence taken in this inquiry."

Question, "That this paragraph stand part of the Report," put, and negatived. Paragraph struck out.

Paragraph beginning, "Although it does not appear, &c."

Amendment proposed (Mr. *Chancellor of Exchequer*), "to leave out from the beginning of the paragraph, down to 'respects,' in line 3."

Question, "That the words proposed to be left out stand part of the paragraph," put, and negatived. Words struck out.

Another amendment proposed (Mr. *Bright*), to insert at the beginning of the paragraph, the words, "Although it does not appear from the Evidence, that any one of these lines has any advantage over the others, in these respects, of so decided a character as to lead the Committee to adopt it solely on that ground." Question, "That those words be there inserted," put, and agreed to.

Same paragraph. Another amendment proposed (Mr. *Chancellor of Exchequer*), after the words "Cape of Good Hope," to insert the following words, "And at the same time affords a Postal Communication between the Australian colonies and India, Batavia, China and Manilla, which is much required, in the opinion of several of the Witnesses, for the rapidly increasing trade between those countries and the Australian colonies, and which is not afforded by either of the other lines." Question, "That those words be there inserted," put. Committee divided:

Ayes,

Ayes, 5.	Noes, 8.
Mr. Chancellor of Exchequer.	Mr. E. H. Stanley.
Mr. Wm. Cowper.	Sir James Hogg.
Mr. Willcox.	Lord Naas.
Mr. J. Wilson.	Mr. Plowden.
Mr. H. Berkeley.	Mr. Scott.
	Mr. H. Currie.
	Mr. Mangles.
	Mr. Bright.

[Adjourned till Thursday next, at One o'clock.

Jovis, 5° die Junii, 1851.

MEMBERS PRESENT:

Viscount JOCELYN in the Chair.

Mr. Stanley.	Sir James Hogg.
Lord Naas.	Mr. William Cowper.
Mr. Plowden.	Mr. Willcox.
Mr. Divett.	Mr. H. Currie.
Mr. Mangles.	Mr. Wilson.
Mr. Bright.	Mr. H Berkeley.
Admiral Bowles.	

The Committee proceeded with the consideration of the Draft Report, and made several amendments therein.

Paragraph beginning "The same company, &c." Amendment proposed (Mr. *W. Cowper*), to add at the end of the paragraph the words, "increasing the course of post to 141 days." Question, "That those words be there added," put. Committee divided:

Ayes, 4.	Noes, 7.
Mr. Wm. Cowper.	Lord Naas.
Mr. Willcox.	Mr. Plowden.
Mr. H. Berkeley.	Mr. Divett.
Mr. J. Wilson.	Mr. H. Currie.
	Mr. Mangles.
	Mr. Bright.
	Admiral Bowles.

Question

Question "That the paragraph stand part of the Report," put. Committee divided:

Ayes, 4.	Noes, 7.
Mr. Wm. Cowper.	Lord Naas.
Mr. Willcox.	Mr. Plowden.
Mr. J. Wilson.	Mr. Divett.
Admiral Bowles.	M. H. Currie.
	Mr. Mangles.
	Mr. Bright.
	Mr. H. Berkeley.

Paragraph struck out.

Paragraph beginning "The Peninsular, &c., Company." Amendment proposed (Mr. *Wm. Cowper*), to leave out from "55" to the end of the paragraph, and to insert the words, "and supposing three days were allowed, the course of post would be reduced to 109 days." Question, "That the words proposed to be left out stand part of the paragraph," put. Committee divided:

Ayes, 6	Noes, 4.
Lord Naas.	Mr. Wm. Cowper.
Mr. Plowden.	Mr. Willcox.
Mr. Divett.	Mr. J. Wilson.
Mr. H. Currie.	Mr. H. Berkeley.
Mr. Mangles.	
Admiral Bowles.	

Paragraph beginning "It is possible." Amendment proposed (Mr. *Wm. Cowper*), to leave out from "arrangement" to the end of the paragraph, and to insert the words, "some addition of time must be made to the voyage from Sydney to Singapore, to meet the chances of delay." Question, "That the words proposed to be left out stand part of the paragraph," put. Committee divided:

Ayes, 9.	Noes, 3.
Mr. E. H. Stanley.	Mr. Wm. Cowper.
Sir James Hogg.	Mr. J. Wilson.
Lord Naas.	Mr. H. Berkeley.
Mr. Plowden.	
Mr. Willcox.	
Mr. Divett.	
Mr. H. Currie.	
Mr. Mangles.	
Admiral Bowles.	

Question, "That this be the First Report of the Committee," put, and agreed to.

Resolved, "That the Chairman be instructed to move The House that the Committee be empowered to report their Observations, together with the Minutes of Evidence taken before them, from time to time to The House."

Chairman to report.

[Adjourned till Tuesday, 17th, at Twelve o'clock.

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Jovis, 10° *die Aprilis*, 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. Henry Currie.
Mr. Divett.	Lord Naas.
Mr. Corry.	Mr. Willcox.
Admiral Bowles.	Mr. Henry Berkeley.
Mr. Mangles.	Mr. Bright.
Mr. Scott.	Mr. James Wilson.

VISCOUNT JOCELYN, IN THE CHAIR.

William Fane De Salis, Esq., called in; and Examined.

W. Fane De Salis, Esq.

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1. *Chairman.*] WILL you state to the Committee the position in which you have stood in reference to New South Wales, or any of the colonies of Australia, and what opportunities you have at present of knowing their views as regards steam communication with England?—I have been resident in New South Wales nearly eight years, in which colony I am a land and flockowner, and have also considerable coalmines. I was a bank director, and extensively engaged in business as a merchant and shipowner in Sydney. I correspond with several persons resident in the colonies, and in particular with some of the gentlemen who are in the Legislative Council of New South Wales, with whose views I am consequently well acquainted. I have also got together all the reports made to the Council on the subject of steam communication.

2. Will you state to the Committee the views of the colonists upon the subject, as far as you are able?—They are exceedingly anxious that steam communication should be at once established, believing that its absence has hitherto greatly retarded the due progress of Australian commerce and colonization.

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3. What steps have been taken by the Legislative Council?—They appointed three committees on the subject: the first committee was appointed in the year 1846, and reported in that year; the second committee was appointed in 1848, and also reported in that year; the third committee was appointed last year, and its report has only just reached this country.

4. Are you aware what sums were voted by the Legislative Council to effect this object?—The first committee which sat in 1846 recommended that the sum of 6,000*l.* a year should be voted towards establishing steam communication.

5. Were any further steps taken subsequently to 1846?—The second committee confirmed the recommendation of the first committee; the third committee recommended a variation in the appropriation of the sum voted; viz., 6,000*l.* a year for the Torres Straits route; 3,000*l.* a year for the Western route, *viâ* Cape Leeuwin, and 2,000*l.* a year for any other route; but the Council do not appear to have adopted these recommendations; they only adopted the first recommendation, which was for 6,000*l.* a year *viâ* the Torres Straits route. I hand in copies of the three reports; the evidence annexed to which will be found to contain much interesting hydrographical and other information. (*The same was handed in.*)

6. Have you any further communications of a later date?—I have a letter addressed to me by the gentleman who acted as chairman of the last committee, which I received a few days ago, and from which I will read a short extract: "I send you a copy of our report, but I fear all that we may report, and speak, and write on this side of the ocean is useless. We are not to have steam communication. I do not believe the Government at home are in earnest about it; and, upon my word, I begin to think happy will be the day when Sir William Molesworth's plan is adopted, and the colonies are really left to themselves; it is so sickening to find ourselves cabined, cribbed, confined, and hampered in every possible way by some imperial hindrance, that I am weary of it."

7. Do you know whether the Council were unanimous in the opinion to which they came?—They adopted it unanimously. There was one gentleman who spoke in favour of the Cape route.

8. What routes were under the consideration of the Council?—Three routes; *viâ* Panama, *viâ* the Cape of Good Hope,

Hope, and *viâ* India. There appears to have been nothing said about the Panama route.

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9. Have you any reason for thinking that the Torres Straits route was preferred by the Council?—In their last report, dated the 3rd of September 1850, they express a very strong opinion upon that point. In order to answer the question which has been put to me, I think I had better read a few lines from this Report: "As the immense importance of the establishment of steam communication with Europe by way of Singapore in preference to any other route has been most incontestably established in the successive reports which have been made to your Honourable House on the subject, and is now universally admitted, your Committee deem it unnecessary to adduce further testimony in corroboration thereof." They do not say anything further with regard to the route. In their first report they entered very fully into the question of the route. In their second report they also entered into the question of the route, and in both cases they came to the conclusion that the route *viâ* India, was the one that ought to be adopted, and in this report they confirm that opinion.

10. Do you consider that the interests of New South Wales are distinct from the general interests of the colonies of Australia with reference to the route?—No, I do not. I consider that the interests of all the colonies require that the route should go by India.

11. Have you reason to believe that the Torres Straits route is equally advantageous to all?—I believe that the interests of New South Wales are opposed in this respect to the interests of South Australia; for which colony the route *viâ* Cape Leeuwin would undoubtedly be the best. The interests of Port Phillip and Van Diemen's Land seem also to incline towards the above route. But against that must be taken the opinions of all the naval officers, gentlemen of considerable hydrographical eminence, who have surveyed the Australian coasts. I will mention Captain Blackwood, Captain King, Captain Yule, and Captain Stanley, the son of the late Bishop of Norwich; who all seem to consider that the Torres Straits route is infinitely better adapted for the purposes of safe and certain navigation than the western route. Therefore it comes to this, that the interests of New South Wales, and the advantages in point of navigation, seem to be somewhat at variance with the interests of the western colonies. It is a matter upon which each colonist would probably speak according to his own interests. As

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being identified with New South Wales, I should certainly wish to see the route go by Torres Straits. It seems to me, however, that this is a matter upon which the Committee will do well to ask for professional evidence. Captain Blackwood is at present in this country; he is commanding the flag ship at Portsmouth, and he would be a very proper person to give evidence upon the subject. The Committee might hear him and other naval officers, and then decide according to the weight of the evidence.

12. Can you state to the Committee the nature and extent of the commercial relations of the Australian colonies?—I have made an extract from the imports and exports, with the view of showing the Committee the parts of the world with which those colonies are most connected. I find that the imports from England for the year 1849 (we have no documents to enable us to form a correct opinion as to what the exports or imports were for 1850, and therefore I take the year 1849) came to 2,200,000*l.* The imports from India, Manilla, and Singapore are the next in amount, and they amount to 420,000*l.* The imports from China are the next in amount; they come to 224,000*l.* The imports from America, which are next, come to 50,000*l.*; then come the imports from the Mauritius, which come to 45,000*l.*; those from the Cape of Good Hope come to 20,000*l.*, from Portugal to 5,000*l.*, and those from France to 4,000*l.* The inference I draw from this analysis is, that the imports from India and China are rather above one-fourth of the amount of the imports from England, and that the imports from the rest of the world amount to scarcely anything.

13. Have you taken that from official documents?—From official documents and newspapers.

14. Of what do the exports to England generally consist?—The exports to England consist almost entirely of wool, oil, and tallow; the exports to other parts of the world than England, in point of monetary value, are trifling, with the exception, perhaps, of an export of copper, which has recently sprung up from South Australia, and a great portion of which goes to India; an export of coals has also sprung up lately to California, but the amount of that in money is small, though it occupies a great deal of shipping.

15. What do the imports from England to the colonies chiefly consist of?—They are articles for daily consumption; clothing, wines, spirits, beer, books, and goods of various descriptions.

16. Manufactured

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16. Manufactured goods?—Manufactured goods; also raw materials.

17. Have you any knowledge of the intercolonial commercial communication?—Colonial steamers keep up a communication now from Moreton Bay, which is the extreme northern settlement, to Adelaide. A steam company called the Hunter's River Steam Navigation, possessing upwards of 8 steamers, at present performs almost exclusively the service of those colonies.

18. What should you say are the chief points of intercommunication by steam?—The chief steam line is the line that runs from Sydney to Port Phillip, and goes from thence to Launceston. The steamers return from Launceston to Port Phillip, and from Port Phillip they go to Sydney.

19. Are you of opinion that next to England, the most important point to effect rapid communication with from the Australian colonies is India and China?—Decidedly.

20. Have you turned your attention to the different projects which have been before the public, and have you had any personal experience, or have you gained any information from practical men with reference to their merits, which would enable you to furnish the Committee with information respecting them, regarded either as postal, emigrant, or goods lines of communication?—I have considered very attentively all the routes which have been projected to Australia, which are known to be three; the route *viâ* Panama, the route *viâ* the Cape of Good Hope, and the route *viâ* India; the first two I think ineligible, because they are not adapted for postal communication. These two routes can be carried out in no other way than by auxiliary screw steamers, a class of vessels hitherto considered so inferior to paddle-wheel ships that they have never yet been employed to carry the mails on any postal line. I would observe, that when I look at the importance of our Australian colonies and see the large quantity of British capital, amounting to 2,800,000 *l.*, which is daily turning in their trade, I think that colonies, whose commercial importance is so great, are decidedly entitled not to an inferior kind of communication, but to the quickest and most certain means of communication which modern science is able to afford; they ought, I think, to have the same kind of communication which is given to the West Indies, to North America, and to India; and so soon as the screw is found to answer well enough to be applied by the Government to keep up the communications of those other lines now maintained by paddle-wheel steamers, then I think it would be

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right to give Australia a screw communication; in the interim, until the powers and capabilities of the screw for ocean voyages are placed beyond dispute, I do not see how the executive would be justified in experimentalizing on Australian postal intercourse by selecting, to the exclusion of other and more approved modes of conveyance, an invention admitted to be as yet far from perfect. I therefore repeat, that the commerce of Australia, as well as the importance she is of to England, entitle her to the most speedy and certain communication which modern science is able to afford.

21. Can you state the views of the colonists with regard to the Panama route?—They do not seem to think that route will at all answer their social or commercial requirements. The best proof I can give of their feeling on that point is this, that although the attention of the colonists has been prominently directed to the west coast of America lately, in consequence of the discovery of the Californian mines, and very great intercourse has sprung up between Sydney and California, yet the Legislative Council Committee, who sat the other day in Sydney, with that fact before their eyes, did not mention Panama at all in their report.

22. You consider that there is no advantage in bringing New Zealand into connection with Australia?—To the Australian colonies their trade with New Zealand is a matter of very little importance indeed; it amounts to scarcely anything in point of value. The presence of troops in New Zealand, now equal to one-fourth of the white population, in consequence of the late war, has naturally induced shipments from Sydney; but when the troops are withdrawn these shipments will cease.

23. Has your attention been turned to the existing line by Suez, and the proposals which have been made for extending the communication from Singapore to Sydney?—I have considered the Suez route, and I have heard the nature of the proposals made by the various projectors, to extend the communication from Singapore to Sydney.

24. What do you believe to be the views of the colonists with regard to that proposal?—It is their desire to see the extension from Singapore to Sydney carried out. Their present views do not go beyond Singapore; they wish to join themselves to the existing communication.

25. Do you believe that that line will be adapted only for postal communications?—So far as relates to India it is well adapted for the conveyance of goods and passengers, but

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but I do not think it offers many advantages beyond great certainty of postal communication, so far as England is concerned. It is clearly a line that cannot offer any extensive means of conveying merchandize to or from England, and the passage price, unless reduced, would militate against any extended passenger trade.

26. Are you aware of the cost of the passage by the existing steam communication from England to Singapore?—It is 142*l.* I understand at present.

27. Have you calculated the additional charge which the extension to Sydney or some other part of Australia would require from passengers?—The ships proceeding now from Sydney to Singapore charge 40*l.* I therefore assume that that would be about the price that the steamers would charge.

28. Are you aware of the charges for freight upon that line?—To Singapore the charges for freight are not very large because ships go up in ballast, and therefore they are glad to take anything. The freights charged vary from 1*l.* to 30*s.*, sometimes less.

29. Is there a class of settlers who would be likely to be in a position to take advantage of such a communication?—There are some settlers, but there are more merchants who would be glad to pay any price in order to get home with quickness and with certainty, and to whom it would be worth while to pay a very large sum to do so.

30. Is that an extensive class?—Yes, it is a very considerable portion of the community.

31. Do you imagine that with the charges you have stated there is any probability that if that line of communication from Singapore to Sydney were established, merchandize would be conveyed to any extent by the steamers upon that line?—No goods would be likely to be sent, because Australia produces no articles capable of bearing the high freight that it would be necessary to charge. I think that some passengers would offer, I do not say many, perhaps from 20 to 25 a month.

32. Is there not a class of settlers called "intermediates"?—Yes; these are people who generally have about 50*l.* or 60*l.* of their own, and who, requiring more comforts than the common class of emigrants, pay higher for it, and get a better class of accommodation in the ships that take them out, and they are in consequence called "intermediates."

33. Do you know what they usually pay for the passage from England to Australia?—The present price of an intermediate passage is from 20*l.* to 30*l.*

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34. Do you know what the usual charge for ordinary emigrants is?—The contract price of the Government Commissioners to Port Phillip is, I believe, at present 11 *l.* 5 *s.* It has been lower than that.

35. Mr. *Divett.*] What is it to Sydney?—It ought to be about 10 *s.* higher to Sydney, but it is often the same to both places.

36. *Chairman.*] Can you state what is the freight per ton generally charged for goods in sailing vessels?—The freight varies from 20 *s.* to 35 *s.*; on some articles it is a great deal less. Salt, for instance, often goes out for 10 *s.* or 15 *s.* a ton. Iron also goes out cheap, being an article that stows in a very small compass, and which is useful to ships to ballast them; but for common merchandize, manufactured goods, the average price, I should say, is about 32 *s.*

37. Do you believe that the traffic either in passengers or in merchandize, on the line between Singapore and the Australian colonies, can be in itself remunerative?—Certainly not.

38. You are then of opinion that it must be looked upon as part of a much larger scheme?—Decidedly.

39. Mr. *Bright.*] In giving that answer do you apply it to any particular number of passages; would it be equally unremunerative if the voyages were seldom as if they were frequent?—If the voyages were performed at distant intervals there would be more passengers each voyage; passengers would wait for the opportunities; for example, supposing the dispatch were made quarterly in lieu of monthly, there would be more passengers in a ship going quarterly than if the ship went monthly.

40. But suppose the passage were monthly, is it your opinion that the remuneration would not be sufficient to the parties investing their money?—The passage-money alone would certainly not be anything like sufficient to pay the expenses, much less afford a fair profit.

41. You have said that you thought there would be a considerable number of merchants that would make the passage; is not that an increasing class of persons in the colonies?—Greatly increasing. When I spoke of merchants, I should have said shopkeepers too; the shopkeepers there are an intermediate class between the class that here fill the position of shopkeepers, and merchants; they correspond more to the storekeepers in America; they have large transactions; time to them is valuable, and they are anxious to visit England, and

and they do visit England constantly, to make arrangements for their trade.

42. Are not the advantages of buying personally in this market rather than through agents very great, and such as would lead, if there were a certain and regular and speedy communication, to many more of those merchants coming here, and to their coming oftener than at present?—Undoubtedly; it is exactly that object which leads those shopkeepers to make frequent visits to England, which they constantly do now, although the means of transit are so tedious, and take them away from their business for such a length of time.

43. Mr. *Divett.*] Do not you find practically that, when emigration is going on steadily, there is a great increase of emigrants of that class to those colonies?—Certainly; it is a great inducement to people of that kind to go out.

44. The question refers to people of moderate capital, who are going out to carry on business on their own account?—Just so.

45. *Chairman.*] Can you tell the Committee what the cost of a passage for a first-class passenger is at present in a sailing vessel from England to Australia?—It varies from 60*l.* to 80*l.*

46. Mr. *Mangles.*] Is it the same home?—The rates home are a little higher, about from 5*l.* to 10*l.* higher; the ground given for that is that cabin stores in the colony are dearer.

47. From 70*l.* to 90*l.*?—From 70*l.* to 90*l.*

48. Mr. *Corry.*] What is the length of the passage?—The average length of the passage out would be about 108 days, but that would depend very much upon the class of ship. Emigrant ships being lighter in the water, would make the passage much quicker than deeply laden merchant ships do. If a ship takes out much salt or iron, or any article of that description, she will make a much longer passage than a lightly laden ship. The usual size vessels that go out with merchandize are from 400 to 500 tons, and they do not make a much better passage upon the average than 120 days.

49. What is the average passage of the steam-vessels from Singapore to England?—I am not able to give information upon that point.

50. Mr. *Divett.*] Is there not an additional reason for the increased expense of the return voyage, namely, the certainty of its being considerably longer than the outward one?—No; I do not think that is a matter which is regarded so much as the increased value of the stowage for water and provisions

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on the return voyage, compared with the value of the freight on the outward passage. On the outward passage the value of the freight is very small indeed, as I stated, about 32*s.*; but on the return voyage the value of the freight would be from 3*l.* 10*s.* to 4*l.* per ton.

51. Mr. *Scott.*] The tendency of the answers which you have given is to prove the general desirableness of having a rapid communication with Australia?—Clearly.

52. *Chairman.*] Has your attention been turned to the proposed route *viâ* the Cape of Good Hope?—Yes; I consider it is a most important route to the colonies, if it can be carried out in the way in which it is projected.

53. What are the opinions generally held by the colonists themselves as regards the Cape route?—They believe it to be impracticable. The bulk of the evidence adduced before the committee of the Legislative Council goes to show that it is very difficult to be carried out. The great difficulty, according to their opinion (and I believe the same opinion is held in this country too), seems to be in making the voyage from Adelaide to the Cape of Good Hope against the violent westerly winds, which constantly prevail in the latitudes that a vessel would have to pass in order to effect this voyage.

54. What grounds have you for believing that that route is not adapted for postal communications?—I do not consider that any certainty of transit can be realised on the portion of the voyage I have named, and I believe this is the opinion of many persons who are competent to form a practical judgment on the point.

55. Do you confine your objections to the proposal of it as a postal line, or do you object to it as a general line of communication?—My objection to it is chiefly on the ground of its not offering proper means of postal communication, one of the essential ingredients of which I consider to be regularity of dispatch and arrival, which I think that route would not realize.

56. Have you looked at it as an emigrant line?—I think as an emigrant line, it is a line that merits the greatest attention on the part of those interested in Australia.

57. In what manner do you think that it might be opened with the greatest advantage to the colony?—I think it might be opened with great advantage, if commenced in the first instance, not as a monthly communication, but with a quarterly dispatch. Experience would thus be gained, where it is much required, as to the horse-power and size of the ships best adapted to the voyage and the requirements of the colonies;

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colonies; all the disputed points connected with this route, upon which practical men differ so much, might also thus be satisfactorily settled. One of the points which I specially wish to see disposed of, not by mere assertion, but by actual performance, is the return passage between Adelaide and the Cape, which so many people contend these steamers never will accomplish with any degree of regularity.

58. Are you aware that the tender for this line has been proposed to be performed by screw steamers?—Yes; I am aware that it would be performed by that class of vessels.

59. Are you aware that those vessels, both as to build and cost of conveyance, are said to be better adapted for conveying goods and emigrants, than paddle steamers?—It appears probable that this will be the case.

60. Lord *Naas.*] You are of opinion that the Cape of Good Hope line is the only line of the three that is capable of conveying emigrants?—Decidedly.

61. Mr. *Mangles.*] By emigration, you mean the emigration of the labouring classes?—Yes.

62. Mr. *Corry.*] You stated that you thought the Cape route was impracticable, on account of the heavy gales the steamer would have to contend with; then how could that route be useful for emigrants?—I meant impracticable for postal purposes.

63. Mr. *Divett.*] But that would be not so much on the outward voyage, as the homeward voyage?—The objection made to this route by those who have considered it, applies chiefly to the homeward voyage.

64. Generally speaking, in the passage from the Cape to Australia, do not you get a fair wind upon the outward voyage?—The winds are usually westerly, and therefore fair for the outward-bound ships. I believe there can be no doubt that the outward voyages would be made with great speed and certainty.

65. *Chairman.*] Could not emigrants be taken out in screw steamers, at much less cost than in paddle-wheel steamers?—Screw steamers would be able to take out emigrants at a far less cost than paddle-wheel steamers could, and this, I conceive, constitutes one of the most favourable features in the Cape route scheme.

66. You therefore think that the Cape line would be most likely to be adapted for general trade and emigrants?—I think it promises to be so.

67. Do you consider that the profits arising from this line would be such as to induce capitalists to undertake it eventually,

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tually, even without Government assistance?—I think that is extremely probable to be the case.

68. By the extension of the line by the Cape to Singapore, would not the advantages of communication with the main line from England to China be equally obtained?—I do not see that any advantage would be gained to Australia by extending a line from the Cape to Singapore.

69. You have stated that you consider that the line from Sydney to Singapore must be a portion of a general scheme?—Certainly.

70. Do you think that the extension of the proposed scheme *viâ* the Cape to Singapore, might have the same effect of bringing the Australian colonies into communication with the main line to Singapore, as if the main line to Singapore were to be extended to Australia?—This measure, it appears to me, would but little affect Australia. But to establish a line *viâ* the Cape of Good Hope, as subsidiary to the line *viâ* Singapore, would be a matter of great importance, and a very great benefit to the Australian colonies.

71. Then your opinion is that the line *viâ* Suez to Singapore, and from Singapore to Sydney, is the line best adapted for postal communications?—Decidedly.

72. And you believe that the line *viâ* the Cape of Good Hope, is the only line which can be serviceable for the carriage of merchandize?—I am of opinion that that line is the only line that can be applied towards the purposes of emigration, and the carrying goods at anything like reasonable freights.

73. Lord *Naas.*] Do not you think that transhipment is fatal to either emigration or to freight?—It must be fatal to emigration, and also to goods, excepting those of a valuable description.

74. Mr. *Divett.*] When you speak of "emigration," you mean the emigration of poor people who are going out at the public expense?—Yes.

75. Lord *Naas.*] And intermediate passengers?—It would apply to them equally.

76. Mr. *Divett.*] What is the difference of time between the regular outward voyage to Sydney and the home voyage?—I think there is no very great difference in length. I stated that the average of the outward voyage was 108 days; I should say that the return voyage would be about 112.

77. Has not the regular voyage been reduced very much below that, particularly in emigrant ships?—Decidedly; I am speaking now of voyages to and from Sydney.

78. Has

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78. Has not the outward voyage been reduced as low as 90 days?—It has been done upon one occasion in so short a space as 89 days to Sydney.

79. What is the shortest home voyage that you have heard of from Sydney?—Ninety-three days.

80. Mr. *Corry*.] In the event of steam communication being extended from Singapore to Australia, what port would you propose as the final port of arrival in Australia?—That opens the question again as to whether the Torres Straits route is to be adopted, or the western route.

81. Taking the Torres Straits route?—By Torres Straits, the point of departure would be Adelaide. The steamer would go to Adelaide, and return thence; Adelaide would therefore, in this case, be the starting point.

82. Would she touch at any port in Van Diemen's Land?—I should consider it would be expedient that she should not touch there, and I believe the Government and council of that colony do not expect that she should touch, but have already made arrangements with a colonial company to run a steamer to Melbourne to meet her, and take the mail to Launceston.

83. How would they accommodate Western Australia, which has no steam packet company?—This arrangement would deprive Western Australia of direct steam communication, but that would be a matter of little importance. The population of Western Australia amounts only to 5,000, and the interests of this small community might with fairness be postponed to those of the larger colonies.

84. Has it ever been proposed to pass through Torres Straits one way, and then to make the circuit of Australia, and return the other way?—It has been proposed to go to Australia by the western route, and to return *viâ* Torres Straits.

85. From Singapore?—Yes.

86. Mr. *Divett*.] That proposition is in consequence of the winds which are supposed to prevail off Cape Leeuwin?—The winds off the Leeuwin are westerly, and therefore favourable; there is also a favouring wind for six months of the year from Sydney to Torres Straits.

87. Have you any personal knowledge of the Torres Straits route?—I have never passed through Torres Straits myself, but I have owned ships in those countries, and I have given the navigation not only of those straits, but also of the adjoining seas, very considerable attention, and therefore I perhaps understand the subject.

88. Can

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88. Can you give the Committee the rate of insurance from Sydney to Singapore through Torres Straits, and the rate of insurance by the other route?—The London offices estimate the dangers of Torres Straits a great deal higher than the Sydney underwriters do. The Sydney underwriters would not charge much more than a half per cent. additional for Torres Straits, but in London they would charge as high as 2½; that would be for a single voyage; by the year, it would be a matter of agreement.

89. What would it be by the year?—Ships are usually underwritten in London at so much per cent. A ship, according to her class, and according to her voyage, may vary from five to eight per cent.; but in taking ships at that rate of insurance, it is often necessary with the London underwriters to stipulate that she shall not go through Torres Straits, or if she does, that she is to pay an additional rate.

90. What is the stipulated additional rate for going through Torres Straits?—On the average I should say it would be 1½ per cent. more per annum for liberty to go through Torres Straits.

91. You have stated that the Legislative Council of New South Wales agreed to give assistance to the Torres Straits route, as being the most advantageous one to Sydney. Were the circumstances and wants of other colonies taken into consideration in those deliberations?—I fancy they were only considering the interests of their constituents.

92. They have not looked upon it as an Australian question, or even as a Port Phillip question?—I will not say that they did not consider the interests of Port Phillip, because Port Phillip then constituted an integral portion of New South Wales, and there were representatives of Port Phillip to speak for that district in the council; but I think it probable that they neither looked to South Australia nor to Van Diemen's Land.

93. I believe the representatives of Port Phillip were not very regular attendants, were they?—They sometimes attended.

94. You spoke of steam companies running between Moreton Bay and Adelaide. Is there regular steam communication between Moreton Bay and Adelaide?—There are steamers plying along the coast the whole way from Moreton Bay to Adelaide, but there is no regular communication.

95. Is there a regular communication all the way from Moreton Bay to Melbourne and Launceston?—Yes.

96. How

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96. How often?—There is a regular steam communication between Sydney, Melbourne, and Launceston once a month.

97. Not so far as Moreton Bay?—No; there are steamers plying along the coast, but there is no regular line; the times of the arrivals and departures of the various steamers not exactly coinciding to a day.

98. Did the Legislative Council, in recommending the route through Torres Straits, contemplate what is called the inner or the outer passage?—I apprehend that is a question upon which they offered no opinion. Captain King, who is an eminent hydrographer, and has been employed in the survey of the coast, recommends the inner passage; however, that is an opinion which is not shared by mercantile men, or by the commanders of merchant ships. The result of Captain King's recommendation is, that all ships of war and vessels under charter to Government with troops go the inner passage. Merchant ships, however, invariably go the outer route.

99. Mr. *Scott.*] Your evidence only goes to show what is the opinion of the colonists of New South Wales upon this subject?—Just so.

100. And the answers you have given to questions either as to the amount of freight by the different routes, or as to their merits in a nautical point of view, are merely general opinions, not professional ones?—Merely general opinions.

101. And likewise with respect to what you have stated as to the amount of risk and insurances, that is merely a general opinion, not the opinion of a professional man?—With regard to insurance I have stated such information as I have collected during my residence in that country as a shipowner, together with such information as I may have derived from nautical people and persons connected with shipping in this country.

102. Can you state what would be the amount of postage derived, first from New South Wales, either including or excluding Port Phillip, and then next from Van Diemen's Land and South Australia?—I have prepared an estimate on this point; there is an estimate with reference to postage annexed to the report which I handed in, I mean the report to the Legislative Council which was made in 1848; this estimate of postages was for the year 1847, and it amounted to 19,000 *l.* Now, since 1847 the population and trade of the colonies have very much increased; from all the information which I have been able to collect, I believe one may very safely add 4,000 *l.* to that estimate, which would

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make the postage for New South Wales amount to 23,000*l.* Then the postages of Van Diemen's Land we have no accurate means of getting at, but taking the amount of exports and imports, I think it may be fairly assumed at 5,000*l.* a year. I take the postages of South Australia at the same sum, their imports and exports being very much the same; the imports and exports of Western Australia are very trifling, and therefore I have put down 200*l.* as the postal revenue of that colony; and I have put down 500*l.* as the postal revenue of New Zealand. I hand in an estimated statement of postages—(*the same was then put in*).

103. *Chairman.*] Upon what document do you found that statement?—I formed my estimate of the New South Wales postal revenue upon the inquiries which were instituted into the matter by the Legislative Council; I have no official documents to guide me with reference to Van Diemen's Land and South Australia, therefore I found it, so far as these colonies are concerned, upon the amount of imports and exports, and the general knowledge I have of their trade and population.

104. Then that is merely a supposititious calculation?—It is merely an estimate; the whole amount of those postages, together with the grants which have been voted by the different Councils of the colonies for establishing steam communication, come to 44,700*l.*

105. Lord *Naas.*] Are the sums voted by the colonies applicable only to the Singapore line?—The 6,000*l.* a year voted by New South Wales is applicable only to the Singapore line.

106. Mr. *Mangles.*] Do you mean that the colony would not grant any assistance to steam communication by any other route?—I stated at the commencement of my examination, that the committee appointed recommended 6,000*l.* for the Torres Straits route, a less sum of 3,000*l.* for the western route, and 2,000*l.* for any route *viâ* Singapore; but the Council would not adopt that recommendation, and only voted 6,000*l.* for the Torres Straits route from Sydney to Singapore.

107. Do you suppose that the colonists are so wedded to the Singapore route, that they would not grant any funds whatever for any other route?—It would appear not.

108. Do you suppose that if it appeared to this Committee or to the Government that any other route was more eligible, the colonists of New South Wales would not contribute towards any other?—If it were made to appear to them that any other route

route than the Singapore route could be made available for the purposes of emigration, I have no doubt they would contribute liberally.

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109. You have spoken of the route by Panama not being applicable, because it is not adapted to postal communication; what did you mean by that?—I meant that I did not think that the voyages on that route would attain anything like that speed and regularity which are essential for postal communication.

110. What is your reason for thinking that regularity and speed could not be attained by the Panama route?—Because it is to be conducted by screw steamers from Panama to Sydney; there is no doubt that, as far as the route to Chagres is concerned, the letters would be transmitted with all the regularity and despatch that could be desired; but the objection is to the voyage from Panama to Sydney, which would be performed by screw steamers.

111. Mr. *Divett.*] Is not this another serious objection, that you have by that route upwards of 7,000 miles of steaming, without any intermediate point of any commercial importance?—That would be a very great objection.

112. Lord *Naas.*] Is the estimate which you have read to the Committee the amount of revenue actually now arising from the postage of the colony, or what you think would be the probable amount?—It is an estimate of the postages which I consider are now received by the postmasters in the different colonies.

113. Do not you think that in the event of steam communication being established, the postal revenue would be materially increased?—There can be no question that it would be very largely increased.

114. What reason have you for thinking so?—The experience of what has taken place in other parts of the world where postal communications have been opened by steam. I would point to the experience which has lately been derived on the American lines, where the postage has increased very considerably.

115. Is not it the case that a great number of letters now find their way to England in different ways, as ship letters and otherwise, so that the present revenue is not so great as it would be if even the same number of letters were carried by regular communications?—There are a great many letters which leave this country for Australia without paying any postage, in consequence of the habit that prevails with merchants of making up what is called a ship-letter bag; those

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letter bags hang up in the offices of the agents, and any person who is supposed to be connected with trade can go into the office of those agents and put his letters into the ship-letter bag without paying the postage.

116. Then if a regular communication were established the ship-letter system would be done away with?—Certainly. The mail steam packets have never been allowed to carry a ship-letter bag; it is contrary to their contract, and would subject them to heavy penalties.

117. So that the letters which now go by ship-letter bags would then go in the mail bags?—They would.

118. Therefore the postage would be paid upon them in this country?—It would.

119. Mr. *Corry*.] With reference to the comparison between Torres Straits and the western passage, would not the voyage from Singapore to Adelaide by the western passage be considerably shorter than from Singapore to Adelaide by Torres Straits?—Undoubtedly.

120. Therefore, though the Torres Straits passage might be more advantageous to the interests of New South Wales, would not the western passage in going to Adelaide, and the Torres Straits passage in returning to Singapore, be better for the general interests of the colonies?—There would be one great objection to that mode of communication, that the steamer would not be able to stop a sufficiently long time either at Adelaide or at Melbourne to allow of the merchants there answering their letters; or at all events, if merchants were able to answer their letters, the community could not, because parties residing in the interior would scarcely have received their letters before the steamer went.

121. Mr. *Divett*.] You are assuming now that the steamer would return through Torres Straits?—Yes; that was the question.

122. Mr. *Willcox*.] You mentioned that recently a great export trade had sprung up in copper to India; what do you attribute that to?—To the establishment of mines in South Australia.

123. Are there any smelting works there?—There are; they have carried it out to a great extent; the export of copper from South Australia last year amounted to £.370,000.

124. Would there be any traffic in horses to India by the steamers?—There are at present a great many cargoes of horses annually, but I should add that I doubt steamers could carry horses as economically as sailing ships.

125. And in returning, would there be teas from China?—They would offer in any quantities the steamers could carry.

126. Does

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126. Does Australia export any coals?—She exports large quantities of coal to India and to China, and lately to California.

127. What were the last prices of coal at Sydney?—The price was very high indeed, in consequence of the great demand for California. My last letter from Sydney informs me that coals had at one time run up to 50*s.* a ton. They are 25*s.* at present.

128. Mr. *Divett.*] What is the ordinary price?—The ordinary price at the pit's mouth is 6*s.* 6*d.* a ton at Newcastle.

129. At Sydney what is it?—About 12*s.* 6*d.*

130. Are you aware whether there is a communication now between the coal-pits in New South Wales and Adelaide for smelting purposes, or *vice versâ* by taking the ore to Newcastle to be smelted there?—Coal has been taken from Newcastle to Adelaide, but no copper ore has yet been sent to Newcastle.

131. Mr. *Mangles.*] You spoke of the uncertainty and length of the passage from Panama to Australia; is there not a fair wind both ways?—There is, but not at all times of the year. During the three winter months, July, August, and September, there are violent westerly winds, which blow almost continually the whole way from the Australian coast to New Zealand, extending sometimes to beyond the tropic, and the longitude of the Society Islands; these would be direct head winds against the steamer going out, and it would be impossible that she could close with the Australian coast without making a considerable deviation to the northward. That would create a delay which cannot be estimated at less than from two to three days, and perhaps much longer.

132. You are speaking of a screw vessel?—Yes. I assume that an auxiliary screw vessel could not go head to wind, but would have to be hauled on the wind, and go as close to it as her steam power would allow.

133. Was not the same argument used with great effect with respect to the passage against the monsoon from Bombay to Suez: did not people believe for a long time that that was impossible?—I have understood that it was questioned.

134. You spoke of the passage-money from England to Singapore as 142 *l.*?—I understand that that is the amount; I came that route myself, but as I did not go direct, I paid my passage from place to place as I went.

135. Then 40 *l.* being calculated as the passage from

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Singapore to Sydney, that would be 182 *l.*, or 364 *l.* out and home; do not you think that would be a price which would render that passage unavailing for a very large proportion of the colonists, who may wish to visit England?—There are many to whom time is of great importance, who would be willing to pay that sum.

136. But on the other hand would there not be many thousands in the Australian colonies who would be practically barred by that price?—It would operate as a bar to a certain extent.

137. To what proportion in extent do you think it would so operate?—I stated that I considered that there would be 20 to 25 passengers a month, and no more.

138. Mr. *Divett.*] You mentioned several gentlemen who you thought would be able to give excellent opinions as to the scientific part of the question of this passage; amongst others, Captain Blackwood. He commanded the "Fly"?—He did, on a surveying expedition.

139. He is a man of great science?—He is a man of high scientific attainments.

140. Who are the other gentlemen that you mentioned?—I mentioned Captain King.

141. He was also engaged on a survey, was he not?—He was engaged on the survey of the north coast of Australia.

142. Who else?—Captain Yule. I believe he is now on service in the Pacific. He served under Captain Blackwood, and commanded a cutter called the "Bramble," tender to the "Fly."

143. Is Captain King in England?—Captain King is in Australia. There was also Captain Stokes, who I am afraid is likewise on service. There is another gentleman whose name I will mention, Captain Hoseason, who commanded the "Inflexible," a large Government steamer on that coast, or the New Zealand coast, and is well acquainted with Torres Straits; he has devoted his particular attention to that coast, and has written on the subject.

144. Is he in England?—He is in England, I understand.

145. Mr. *H. Currie.*] In what year did the committee in Sydney express such a decided opinion against the communication by the Cape of Good Hope?—There were three reports, which I have handed in, in 1846, 1848, and 1850; in all those reports they express an opinion against the Cape route.

146. Did they express an opinion that it was not possible to establish a communication by the Cape?—They expressed

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an opinion upon the project which was put in at the time on the part of Mr. C. D. Hay; I should observe that his project was to perform the service by an auxiliary screw, I think of one horse-power to 10 tons.

147. That was a mere project of Mr. Hay's?—I understood it was.

148. You probably are aware that the "Bosphorus" has been to the Cape and back since that time?—I am aware of it.

149. And that it is possible the Sydney people may be aware of that at present?—Very possibly they are.

150. Are you in a position to give an opinion as to what the opinion of the Sydney people would be after knowing the result of that performance?—I do not think it would alter their opinion very much; the difficulty they contemplated was in making the voyage from Adelaide to the Cape. I read over the evidence given before that Council Committee only yesterday. The great objection to the passage was in consequence of the violence of the westerly winds which prevail in those latitudes along which a steamer would have to go in order to make the return passage from Adelaide to the Cape; therefore I do not think the performance of the "Bosphorus" would vary the opinion which the Council seemed to have come to in reference to the Cape line.

151. Have you ever been there yourself?—I have performed that voyage twice, and I have been once round the Horn.

152. Mr. *Divett.*] You gave the shortest voyage from Sydney to England as 89 days, and the shortest voyage home as 93; was that short voyage home returning by the same route, or by Cape Horn?—By Cape Horn. All merchant ships from Sydney go back by Cape Horn.

153. Have you any information which will enable you to state what is the shortest time home by the other routes?—No, I am not able to answer that question.

154. Do you think that the length of the voyage home that way exceeds the other by a month; that is to say, that assuming the shortest time out to Sydney by the Cape route is 90 days, do you know an instance of any ship having returned that way home in 120 days?—I am not likely to know anything about the duration of such passages, because merchant ships from Sydney, where I was engaged in business, never take that route; it would be from Adelaide that ships would adopt that route, and also occasionally from Port Phillip,

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but from Sydney the ships never go back by the Cape of Good Hope.

155. Mr. *H. Currie.*] You expressed an opinion that the Sydney public wish to have the most direct and immediate communication with England. In how many days do the Peninsular and Oriental Company say that they shall arrive at Sydney?—I do not know, but I have myself made an estimate of the time in which it might be done. This of course depends upon the rate at which the steamers go; if they go at 10 knots an hour, the time will be very much diminished; if they go at 8½ knots an hour, the time will be increased. Taking the rate at 10 knots, a steamer making all the stoppages which she ought to make, might go by Torres Straits to Sydney in 53 days 18 hours.

156. What would the course of post be from England to Sydney?—At that rate it would be 107 days and 12 hours.

157. That is, presuming that the post returned immediately; that upon the arrival of one steamer another returned?—Yes.

158. Are you aware of the proposition that has been made by the Screw Company to the Government?—Yes; I have heard that they have offered to go in 64 days, and to perform the course of post in 135 days.

159. Do you think that it would be a very great advantage to the Sydney colony to have that course of post?—It would be an essential advantage if it could be realised.

160. Whether it can be realised or not is a matter of opinion?—It is a matter of experience problematical as yet.

161. Would it not be of very great advantnge to the colonists to go direct in one ship from London to Sydney, instead of the frequent transhipments that they would be obliged to undergo in the other route?—There is no doubt that it would be a very great advantage.

162. You mentioned that the merchants and shopkeepers of Sydney wish frequently to come to England; would they not much rather pay from 80*l.* to 100*l.* than the larger sum which you mentioned, presuming that they could come in 64 days?—No doubt.

163. I presume that the colonists would be very glad to adopt this route if it were practicable?—Unquestionably; assuming that the rate of speed could be maintained, and that certainty could also be realized.

164. Lord *Naas.*] Have you made any calculation of what the postal revenue is likely to be, judging from the present population of the colony?—Very nearly the same result as that

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that which I have already given to the Committee was arrived at the other day, by assuming that every individual comprised in the population of those colonies would write one letter, and that the postage on such letter should be the packet postage, that is 1*s.*: the population of those colonies amount, in round numbers, to 400,000; that would be 400,000 shillings, amounting to 20,000*l.*; my estimate is 23,000*l.*

165. Mr. *Divett.*] Have you taken that estimate from any person who is in the habit of attending to these things; is not it a very low estimate, one letter to each person?—Too low, I should say. I did not adopt that estimate, but I merely wished to state that such an estimate had been made.

166. Lord *Naas.*] You do not know what the proportion of postage to population is in other colonies; for instance, at the Cape?—No, I have not turned my attention to that point.

167. Mr. *Mangles.*] You spoke of transhipment as being fatal to freight; is the Suez transhipment found to be fatal to freight to and from India?—None but goods of considerable value will bear the expenses of transhipment; articles consisting of the necessaries of life would certainly not do so.

168. You do not mean that there are no articles that go from England to Australia that would bear the expense of transhipment?—There are some, but they are very few; the quantity would be small.

169. With regard to the trade between Australia and the coast of America, is there not a considerable trade springing up between the Australian colonies and the coast of America?—There has been some trade between those colonies and San Francisco, which has sprung up of late.

170. Do you think that that trade is likely to increase?—I assume that it would do so in proportion as the American communities on the Californian coast increase in importance.

171. Is it likely to be a trade of much importance to Australia?—I do not see that just at the present time it is likely to be so, for this reason, that neither of the two countries are manufacturing countries; in fact they are both calculated to produce the same commodities, and therefore I do not see that any very great trade can at present arise between them.

172. Is there not a considerable trade in coal at present?—That is an article exported in considerable quantities; but it does not occupy any large quantity of money, though it finds employment for shipping.

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173. How many ships have you known to be at one time loading with coal at Sydney for California?—I have heard of as many as 18 waiting for coal at Newcastle for California very recently.

174. Would not steam communication with England, taking that route, give increased facilities to the trade between Australia and the coast of America?—No doubt it would.

175. *Chairman.*] Has not a considerable trade in grain lately sprung up with California?—Flour has been exported, but that was owing to the casual necessities of the country; it is not likely to continue; it was merely a temporary trade.

176. Mr. *Mangles.*] And in provisions generally?—Not in provisions generally; but it is possible that meat may be exported, salt provisions.

177. Mr. *Scott.*] Can you give any evidence as to the productiveness of the coal mines in New South Wales?—The average quantity of coal that has been raised in the colony has been about 60,000 tons; that is at Newcastle and in its vicinity. This year the export to California will greatly increase that quantity.

178. Mr. *Divett.*] Do you know anything about other collieries in the country?—There are none worked; several seams have been found in various parts of the colony, but from their not enjoying the advantage of water carriage, and other causes, no coal is worked in them at this moment.

179. Do you know anything of coal in Van Diemen's Land?—There are several collieries in that part of the world. Coal is traceable in various parts of the island, but it occurs chiefly about 20 miles from Hobart Town in the Jerusalem Basin, and in the South Esk Basin. I examined this coal when I visited Van Diemen's Land; the coal raised is chiefly anthracite, and in consequence of its lighting with difficulty, coal is imported from New South Wales to mix with it, and thus make it burn freely.

180. Has any coal been worked in the neighbourhood of Port Phillip?—No coal has been worked; but coal seams have been found at Western Port, although they have not been explored; there are no collieries at present in work.

181. The only regular collieries at present are in New South Wales, and at Newcastle?—Yes, at Newcastle and its vicinity. I have made a plan (reduced from the Government survey) showing the localities of the various collieries now worked. I have also constructed a section of the coast

line

line to show the lie of the coal strata, and the general appearance they present when viewed from the sea-board. I hand in this document. The port of Newcastle has recently been used by ships of the largest size. It is easily accessible and well sheltered. (*The Plan and Section was then handed in.*)

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182. Do the coal strata extend through a great tract of country?—Coal is very widely diffused in that district as well as in other parts of the colony. It has been found 90 miles south of Newcastle, in Illawarra. I have myself seen the outcrop of coal strata in the deep sections presented by the precipitous valleys of the Blue Mountains, 50 miles to the westward of Sydney. I have also examined the outcrop of an apparently very good seam of coal situate near Berrima, about 75 miles to the south-west of Sydney. The area of the Newcastle coal basin has been estimated at 16,000 square miles.

Vide Plan at the end of Appendix.

183. Mr. *Scott.*] What is the quality of the coal for steam purposes?—Very good indeed; the colonial steamers burn it, and find it excellent. I have an analysis by me of various Australian and other coals found to the eastward of the Cape of Good Hope, which I will hand in, in order to give the Committee an idea of the relative merits of the coal which from its local position is likely to be available for the purpose of Australian steam communication. With a view of contrasting the qualities of these varieties of coal with those of English coal, I have also given the analysis of five of the best kinds of English steam coal. From this it will be seen that the Newcastle (New South Wales) coal appears almost identical in constituent parts with the Haswell Walls End, known as the most approved steam coal in the north. These analyses are made by Sir Henry De la Beche.

Vide App.

184. Mr. *Wilson.*] Are you at all cognizant of the extent of the trade which has risen up between China and San Francisco in British ships?—I have heard that it has been very extensive, but I am not able to state the amount.

185. Mr. *Mangles.*] Do you know what was the time estimated for the passage between England and Sydney *viâ* Panama, by those who gave the tenders to the Admiralty?—Speaking from recollection, I think 65 days.

186. And from Sydney?—I believe about four days less.

Captain Sir *James Stirling*, R. N., called in; and Examined.

187. *Chairman.*] WHAT position did you hold in the Australian colonies, and of what part of that region can you principally speak?—I have been employed both in the character

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character of a naval officer, and in that of a civilian, in the Australian colonies; I administered the government of Western Australia for nearly 10 years, and I have visited almost all the Australian colonies in a ship of war.

188. How long is it since you left the colony?—I left it in 1839.

189. Has your attention since been turned to the subject of steam communication with the colonies?—I have given some attention to the subject.

190. Has your attention been turned to the practicability and importance of steam communication between the Australian colonies and England?—I think there cannot be any doubt as to the very great importance of the subject. It is impossible to overrate its importance, not only to the different colonies, but to the interests of Great Britain in those seas.

191. You consider the subject important both in its political and commercial bearings?—Both with reference to commerce, and with reference to the power of the country.

192. Are you aware of the various routes that have been proposed to effect this object?—Yes; I have a general knowledge of the subject.

193. Do you believe that Government assistance is absolutely requisite to accomplish the object?—I believe that Government assistance has a beneficial effect in some cases, and an injurious effect in others. If, of two competing lines or routes, the best be assisted, such assistance is probably superfluous and unnecessary. If the worst be assisted, the better route is thereby injured.

194. What do you think should be the first object to be considered in opening a line of communication; should it be postal communication, or the conveyance of emigrants and merchandize?—The first object with the Government undoubtedly ought to be postal communication.

195. If both objects could be obtained by one line, and only postal communications by another, are you prepared to say that the importance of rapid postal communication is such that all other considerations should be sacrificed to attain that object?—I do not think that any case could arise in which the two objects could be entirely separated; if they could be, it would be impossible to sustain postal communication upon its own results; it would be necessary in that case to incur such an expenditure as neither the Government nor individuals would be inclined to incur; it is necessary, therefore, to consider them in conjunction, and to promote those lines which present the highest amount of advantage.

196. You

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196. You are aware of the various routes which have been proposed to effect this communication?—I have heard from time to time of the routes which have been proposed.

197. Has your attention been turned to the proposal by the Pacific Steam-packet Company to open a route from Panama to New South Wales *viâ* New Zealand?—I am aware that such a proposal has been made, and have given attention to it generally with reference to its advantages and its disadvantages.

198. Both political and commercial?—Yes.

199. Will you state generally your views upon the subject?—Perhaps I may be allowed to state that I think the first consideration upon the subject is to lay down such a general system of communication as may be necessary, either now or hereafter, in order to complete the connexion of all those countries with which we have to deal; it is of the utmost importance to establish the groundwork of a perfect system of communication; it is only by doing so that you can arrive at anything like a sound judgment as to the eligibility of one line or of another. Looking at the subject in that point of view, and considering that there are three distinct routes which may be adopted, I should wish that each of those routes should receive such encouragement as would, either now or eventually, develope their full employment. I think that all the three routes I have adverted to, possess recommendations peculiar to themselves. The route alluded to in the question, by Panama, labours under the inconvenience of having a land journey to be made, and is so far an inconvenient route for the conveyance of heavy goods, and of passengers to whom expense is an object; on the other hand, it provides accommodation for a traffic, and for passengers engaged in a line of traffic, that is extending every day. The commercial communications between Australia and the American coast are likely to become both extensive and active, and to require rapid and regular communication. On these grounds I think that route ought to be maintained. I think it ought to be retained in the hands of this country, rather than be allowed to lapse into the hands of foreign undertakers; it would be a very unfortunate circumstance indeed if the communication between the mother country and some of her more important possessions should be allowed, for want of timely encouragement, to fall into the hands of those who might eventually damage our interests; I should, therefore, upon that ground, be disposed to look at that line as worthy the encouragement of this Government. There are, however,

difficulties

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difficulties upon that line; first, there is a very long transit without any intermediate resting place from Panama to New Zealand, which, I presume, would be the first stoppage.

200. Do they propose to touch at Tahiti?—If that be worth while, it would obviate to a certain extent one objection which has been made to that line; but I think that as far as the wants of commerce go at present, the line of communication between Panama and the Australian colonies might with great advantage be carried on with sailing vessels; by choosing a proper latitude to make the voyage in, a fair wind may be secured both to and fro. The trade winds blow in a certain direction within certain limits of latitude; the westerly winds, on the contrary, blow almost constantly within other limits; so that, by choosing a proper line for each voyage, both might be made with a fair wind; therefore the voyage might be made with as much advantage by fast sailing vessels as by steamers.

201. Do you think that the object of bringing New Zealand into communication is of great importance?—New Zealand is, at present, in its infancy, but we are justified in looking forward to its one day playing a very distinguished part in those seas; I think it would be an act of great injustice to exclude New Zealand from the general consideration of communications in that part of the world.

202. Are you aware of any particular trade between North America and New South Wales likely to be developed by that line of communication?—I believe that the trade at present is limited to a supply of coals and to passenger traffic. I am not aware of any other articles that require accommodation. I believe the distance by the Panama route from England to Sydney may be considered nearly the same as the distance by the two other routes to which I alluded. The eastern coast of New Holland would be more particularly interested in that line. It would not have a very important effect upon any of the colonies, except those situated upon the eastern shore of New Holland and New Zealand.

203. Do you consider that the great objection to this line, as an emigrant line of communication, is the passage of the Isthmus of Panama?—The passage of the Isthmus would be an insurmountable objection to all emigrants in whose case expense would be an object. It would be impossible to carry passengers upon that line at less than 100*l.* a head from England to Australia, which is far beyond what the general run of emigrants could afford to give for their passage.

204. Do you consider that even if railway communication across

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across the Isthmus of Panama were completed, which is now in progress, still the transhipment would be a bar to the employment of that route as a line for emigrants and merchandize?—I cannot conceive it possible that either heavy goods, or that one emigrant out of 100, could ever be brought by that line to Australia.

205. It has been stated by the preceding witness, that at present first-class passengers to New South Wales pay from 60 *l.* to 80 *l.* for the passage out; do you think that by the Panama line the conveyance of passengers would be more costly than by the present line round the Cape in ordinary vessels?—I should think it would be more costly.

206. Have you in your professional duties navigated those seas?—I have made three voyages upon that coast; I made two voyages to New South Wales, along the south coast of New Holland, and another voyage in the opposite direction, from Van Diemen's Land to Cape Leeuwin. I have made a voyage through Torres Straits, and, in fact, I formed a settlement in Torres Straits some years ago; I was there a month.

207. Are there any peculiar advantages for navigation in those seas that would facilitate the application of screw steamers?—Looking at the screw as the auxiliary, and the sails as the principal propelling power, the auxiliary screw steamer has an advantage over the paddle-wheel steamer in saving fuel, seeing that she employs her sails for a much longer portion of time than she employs her steam power. There are routes, such as the route from the Cape of Good Hope to Australia, where westerly winds constantly prevail, which are extremely favourable to the use of the screw; there are other routes where a contrary wind of long duration has to be met, such as the route from Liverpool to Halifax; there a screw steamer would be ill placed; there only a full power steamer could be used. In the Australian service there are routes which present both those peculiarities; there are some in which a fair wind may be calculated upon, and others in which an opposing wind must be met.

208. Have you turned your attention to the proposed line *viâ* the Isthmus of Suez from Singapore, by which it is proposed to connect Sydney with Singapore?—That is liable to the same objections as the other route by the Isthmus of Panama; it imposes the inconvenience of a land journey and transhipment, and it is therefore very ill suited for the conveyance of goods or passengers; I do not think it could ever be a route for the purpose of promoting emigration, or

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for commercial purposes in general. Again, there are other objections to both those lines; they both carry the traffic through a foreign country; they both have to pass along the coasts of powers with whom in the course of time we may be at war, and on that account they do not present the same security that is offered by the Cape line; but in some respects they have very great advantages; certainly the line by the Isthmus of Suez is the best line for postal communications with India in peace time.

209. Why do you come to that conclusion?—Because by that route the mails may be conveyed to Bombay in something under 30 days; by no other route can they reach Bombay in a period nearly double that; that line therefore must always be an important object.

210. Do you consider the effecting a communication with the Eastern Archipelago and India and China to be an object of great importance to the colonies?—I think it of great importance, not so much at present, though the trade I believe is considerable; but with a view to the development of the resources of those colonies, it is of the utmost importance that they should be connected with markets open for the commodities which they produce.

211. Are you of opinion that, in considering steam communication with Australia, it should be made a portion of a large and comprehensive scheme?—Considering postal communication with Australia as becoming every day more necessary, I think that to refuse reasonable encouragement to it would be ungracious on the part of the mother country. I entertain a particular opinion upon the subject, if I may be allowed to express it. I think that good means of communication are not only measures of sound policy, but are, in fact, necessities in the present day. I think that up to the present time we have hardly viewed the question in its proper point of view. The system has been, that proposals for carrying on any particular branch of communication have been made by interested parties to a branch of the Government occupied with more important affairs, and very little qualified to deal with those who act under the influence of self-interest, to obtain concessions. I do not mean to say that there has been any want of attention on the part of the Government—far from it—or any improper dealing with these matters; but as long as they are left to be dealt with in that manner, there will be, to a certain extent, dissatisfaction with the course of proceeding. All that the public know is, that each successive company, in the course of time, comes to make

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make a very handsome dividend to its proprietors, which proves, to a certain extent, that the service has been carried on not upon the most economical terms. I think that the Government, by undertaking the management of this business, draws upon itself a considerable degree of obloquy, because every competitor for a concession, when unsuccessful, becomes of course an enemy to the system which excludes him from advantage; therefore I think that the Government would gain greatly if it would divest itself of the management of this business. I think that not only would the Government gain, and the public service be carried on at less expense, but the colonies would be far better satisfied if this business were entrusted to some actually responsible individual—I say "individual," because I conceive that no responsibility can attach to Boards. I think that a department subordinate to the Government, but not politically connected with it, and not forming a branch of the Government, ought to be esta blished in order to create such a degree of responsibility as will make the individual at the head of it constantly vigilant and guarded in dealing with propositions for particular lines. I would assign to the care of that individual the fund arising from postal communications. The receipts of postage from colonial communication ought to be carried to a separate account, not to the account of the Post-office generally; it is not a fund which belongs to this country; it is a fund into the apportionment of which the colonies have a right to inquire, so far as to be assured that it is applied to the promotion of good communications. Out of that fund, if more than sufficient to defray the expenses of one line, I would propose that grants should be made to other lines not producing a sufficient return to support themselves, but which it may be proper to encourage. I think, until some system of that kind be adopted, it would be difficult to come to a proper arrangement of packet communications.

212. Which route to Singapore do you think will give the most general satisfaction to the colonies, the route *viâ* Torres Straits, or the western route?—I believe the impression in New South Wales is, that the Torres Straits route would answer their purpose best if they were the only parties to be considered. To the other colonies it would be a matter of astonishment if you were to require them to go round the eastern coast of New Holland to go to Singapore.

213. Will you name the colonies which would be brought into communication by the western route?—All the colonies would be brought into communication.

214. Are

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214. Are you able to speak as to the difficulties and dangers said to exist by the Torres Straits route?—I have passed through Torres Straits at the most favourable season of the year, with the very best charts, and with the very best look-out possible; and where no bank had been marked before, I found myself landed upon one.

215. Mr. *Corry*.] Was that subsequently to Captain Blackwood's survey of Torres Straits?—No, it was before. I believe Captain Blackwood has done a great deal to render the navigation easier than it was; but so far as I am concerned, I should be extremely sorry to take that passage in a steamer, particularly during the thick weather monsoon. I consider it an objectionable route for steam-packet communication.

216. Will you state the objections that you have to that route?—The objections are these. I ought first to explain that there are two monsoons. One blows from the west or north-west during one half of the year, and the other from the south-east during the other half. The south-east monsoon brings clear weather, and always moderate weather. The westerly monsoon is what sailors call the thick weather monsoon, frequently accompanied with rain, and likely to embarrass the navigation where banks and islands abound in great number. The danger, therefore, is much greater during the westerly monsoon than during the other monsoon. The next objection to that passage is, that in one portion of it the currents are very strong, and wherever a current exists, and navigators have not much local acquaintance with the district, it may lead to serious consequences. But the principal objection, considered as a route for steam-packet communication, is the very considerable number of banks and islands that exist there. Now, even in the very best line of navigation, we know that steam navigation is liable to great danger from the circumstance that the judgment of the person conducting the vessel is not always sound; it may be affected by health, or various other causes. We have seen one steamer within a few years wrecked even in the neighbourhood of the Isle of Man. We have known two of the steam vessels of the West India Mail Company wrecked upon the Alacranes. I mean that even where the navigation is tolerably free from banks or shoals, accidents will happen, but they are of course much more likely to happen in the midst of banks and shoals. That is a third objection to the route by Torres Straits. Nor do I see anything that would be gained by it; there would be no gain in point of time or distance; there would be no gain in traffic; it would be an absolute abstraction from the general

general accommodation to favour one particular colony in the whole group.

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217. What is the length of that part of the Torres Straits passage which is so perilous?—There are in fact two lines; there is the line within the Barrier Reef, which is usually taken by ships of war, by any ships that can be sure of a good look-out; that I think, from what I recollect of the distance, is about 700 miles in length. The ships are obliged to anchor every night in navigating through that group, in consequence of the coral banks on the exterior side. The other line is through the passage discovered, surveyed, and beaconed by Captain Blackwood with great ability, and it is much shorter. I think the whole of that passage does not exceed 200 miles, but I cannot speak with any certainty as to that, because I did not pass through that channel.

218. Mr. *Scott.*] Your experience is not later than 1839 upon these seas?—No.

219. Captain Blackwood's surveys were subsequently to that period?—Yes.

220. Captain Blackwood is now in this country?—Captain Blackwood is now in command of the "Victory" at Portsmouth.

221. Mr. *Cowper.*] Do you consider that with vessels navigating those seas constantly, as they would if this postal communication were established, and being navigated with great care and diligence by the charts which at present exist, those coral reefs would present such a formidable obstacle as would induce you not to approve of that line?—Practice would of course improve the ability of the navigator, but I think that would not get over the objection arising out of the frequent changes of course during the night. On a steamer going 10 or 12 knots, there will always be danger sufficient to make the route objectionable.

222. Do not you consider that the advantage of having smooth water all the way from Singapore to Sydney is one that gives that route a preference over others?—It is an advantage, but not such as to turn the scale, I conceive.

223. Mr. *Divett.*] You draw a distinction between the inner passage and the outer passage; were you rightly understood to say that the inner passage is amongst reefs for 300 miles?—I cannot pledge myself to the exact distance; I know that we anchored four nights in making the passage.

224. In the outer passage the reefs do not extend beyond 200 miles?—Yes.

225. Having made the outer passage, supposing you are coming

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coming from India to Sydney, you are then in the teeth of the trade-wind?—Yes; in coming to the eastward, but the trade-wind would not be so violent in that quarter as to prevent the navigation.

226. Is not it the fact that the smooth water only prevails in the inner passage, and that in the outer passage you would get a stormy sea?—Not exactly a stormy sea, for the trade-wind there is not very strong.

227. Have you given your attention to the time it would take to reach Sydney from Singapore, passing through Torres Straits, and the time it would take to go to Sydney taking all the colonies in succession?—The time and the distance are of course specially favourable to New South Wales by the Torres Straits route.

228. To what extent?—Not much; I should think that, presuming you have vessels suited to go to the westward of Bass's Straits, the difference of time would not exceed two or three days.

229. Are you allowing now for the delay in Torres Straits from anchoring at night?—No, because I think the inner passage, in which alone anchorage is necessary, would not be practised; steamers would take Captain Blackwood's channel.

230. You have made voyages from the Swan River to Melbourne and back again?—I made three voyages, two one way, and one the contrary way, by the south coast of Australia.

231. What would be the difference of time taken in the voyage from Swan River to Melbourne, as compared with the voyage from Melbourne back again, in consequence of the prevailing winds?—From Melbourne to Swan River by the south coast might be accomplished by a screw steamer in seven or eight days.

232. What time would it take to double Cape Leeuwin each way; supposing you are going from the Swan River to Melbourne and back again, will the return voyage be slower or faster than the going voyage?—From Cape Leeuwin to Bass's Straits the distance, I think, is 1,200 miles; a sailing vessel would make the voyage from Cape Leeuwin to Bass's Straits in six or eight days; from Bass's Straits to Cape Leeuwin, on the contrary, would be a very difficult voyage during the winter season for any sailing vessel; perhaps it might not always be made; there are very strong westerly winds during the winter season; I think, however, that a very fast sailing vessel well found could make the voyage, but

but during the summer season I have known it made in six days to King George's Sound.

233. Mr. *Mangles.*] What do you think would be the average voyage back again?—Taking the year through, I should say from 15 to 20 days.

234. Mr. *Divett.*] You prefaced your evidence upon the Panama route by expressing an opinion as to the importance of some general system; do not you conceive, with reference to a general system, that supposing the Americans were to do anything in the Pacific, they are much more likely to do it in the Northern Pacific than in the Southern?—That would depend very much upon the growth of trade; if there be business to be performed, and this Government do not anticipate the Americans, the Amercians will undertake it.

235. The question refers to the state of things at this moment?—At this moment there is not sufficient trade to maintain upon its own resources a constant and quick communication between America and New South Wales.

236. Is there not a great deal more in the Northern Pacific?—There may be expected a very considerable trade between California and China.

237. *Chairman.*] Has your attention been turned to the proposed route to Australia *viâ* the Cape of Good Hope?—I have considered that as one of the three great routes which are practicable.

238. Is there any trade existing between the colonies of Australia and the Cape?—There has been occasionally, or rather there was formerly, a very considerable trade from the Cape to New South Wales; a trade in wine, and fruit, and articles of that kind; but I believe that has diminished very much.

239. Will you state to the Committee your view of the advantages of the Cape line?—The advantages of the line by the Cape are, that it may be performed in one vessel. The Cape line is independent of foreign influence, and, therefore, politically considered, it promises greater security in case of future war. It may be said to be the line exclusively adapted for the conveyance of the poorer class of emigrants and troops and all classes of goods that will not bear a high freight. It is obvious that it is a line which, whether supported or not by Government, must eventually be adopted, not only for the conveyance of the mails, but by merchant vessels to a great extent, and probably all those merchant vessels will use the auxiliary screw propeller as a mode of propulsion.

240. Are there not instances of westerly gales during

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certain portions of the year, which would have to be encountered, off the coast of New Holland, by that route?—Those gales are always favourable to outward-bound ships. Upon the outward voyage they would be rather an advantage than a disadvantage. From the Cape of Good Hope to Cape Horn the westerly winds blow constantly; a vessel bound to the eastward would find great advantage from those prevailing winds.

241. Do you think those winds are more violent than what are encountered upon other lines; take the North American line?—They are encountered upon the North American line in the same manner, but then they are favourable to the voyage in one direction. Therefore, looking at the voyage by the Cape in one direction, they are a great assistance. But it must be considered that the return voyages have to be made against the winds. There is only one part of the voyage which would be affected by them at all, which would be the portion of the voyage between Bass's Straits and Cape Leeuwin; the distance of that part of the voyage is 1,200 miles. After passing Cape Leeuwin, the easterly winds are easily evaded by going a little to the north.

242. Mr. *Scott.*] By returning through a lower latitude?—Yes. We found in Western Australia that the limit of variable winds in the summer season was as far south as 32° of latitude. The same limit in the winter season proceeded to the north as far as 27° or 28°. It is a variable limit; but a vessel bound from Cape Leeuwin to the Cape of Good Hope might calculate safely upon a fair wind for three-fourths of the distance.

243. Are you aware that it is proposed to carry out the Cape route by means of screw steamers?—I understand so.

244. Do you think that such screw steamers are better fitted for the voyage, and are likely to meet the requirements of the colonies better, than paddle steamers?—That would depend entirely upon the route to be taken. The route from England to Australia by the Cape of Good Hope is peculiarly well suited to auxiliary screw ships. The route by the Mediterranean, the Red Sea, and Torres Straits is best suited to paddle-wheel steamers.

245. We have it in evidence before us that it would be almost impossible to make that passage for postal purposes in screw steamers; do you differ from that opinion?—The Committee are aware that voyages have been performed with great regularity and speed for the last 10 years between Liverpool and Halifax, in which the westerly winds are far stronger

stronger than they are between Bass's Straits and Cape Leeuwin. Therefore I cannot conceive that any person acquainted with that fact can allege that the voyage is impracticable from Bass's Straits to Cape Leeuwin at any season of the year.

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246. The evidence we have had is, that for postal purposes the communication could not be maintained with sufficient regularity with auxiliary screw steamers, with which it is proposed to effect the passage?—That would be in great measure a question of power. I believe the proportion of power adopted by the company now offering to perform the service is one-horse power for seven tons. I should be disposed to try that proportion, although I should not like to say positively that it would be found sufficient upon further experience.

247. Do you consider that a screw steamer could perform that passage with sufficient regularity, both going and returning, for postal communications?—I have no doubt of it; if not with the power the company now propose, at any rate with some larger power; I think the power is sufficient. But the possibility of performing it with screw steamers with one power or another is, to my mind, quite clear.

248. Mr. *Corry*.] By what are designated auxiliary power steamers?—Yes.

249. Mr. *Divett*.] Do you call one-horse power to seven tons an auxiliary steam power?—Yes; the distinction is this, that in the one case the sails are auxiliary to the power, and in the other the power is auxiliary to the sails.

250. What is practically the difference of power between the two classes?—I hardly know that there is any particular distinction established, but the proportion of one-horse power to seven tons is much below what a full-power steamer would be.

251. Take the "Bosphorus," for instance, which has one-horse power to seven tons, and compare it with the "Great Britain;" what was the power of the "Great Britain," which was intended to be worked entirely by steam, without the assistance of sails?—I think her power was 1,000 horse to 3,000 tons.

252. Mr. *Cowper*.] Supposing there were an auxiliary steamer to perform the journey, what difference do you think would arise in the winter months of the year between the outward and the homeward voyage to Sydney by Bass's Straits?—I think it possible that a well-found auxiliary screw vessel might be detained four or five days in making

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those 1,200 miles. I do not think it would be likely to happen, but it might; but that would be the outside of the difference.

253. Supposing that the vessel trusted mainly to her sails, and had only auxiliary screw power, do not you think that occasions would arise when even a longer delay than that would be caused in doubling Cape Leeuwin?—No, I do not think so; I think that four or five days would be the extreme of delay.

254. With sailing vessels, I presume that a very much longer delay than that must occur?—The passage is almost impracticable for sailing vessels for two or three months in the year, but in other months it is so easily made that I have known an open boat come up from Van Diemen's Land to Western Australia.

255. Mr. *H. Currie.*] You were understood to say that you thought it was wise in the Government to cherish the routes by Panama from political motives?—Yes.

256. Would not the same considerations induce the Government to cherish the line of communication through Egypt?—I think that line hardly requires any special encouragement, for the traffic is so great that it more than supports itself; it is a line that ought to be maintained; if not maintained by the English, it would be immediately taken up by France.

257. The line by the Cape of course is not to be considered a political line?—I beg pardon. I think that is a line which both the Government and the public would have to depend upon in war time; it is a line that should be maintained.

258. You are probably aware of the proposal which the Screw Company has made, to perform the voyage in 64 days to Bass's Straits, and home in 68 days; do you consider that, with the very best sailing ships, with an auxiliary power, say ships of 1,400 tons, and a horse-power of 250, they would be able to make that voyage both ways?—I have no doubt myself that the voyage may be made both ways, and within the time mentioned; but I may be permitted to say that I think that line might be improved with advantage to the public, if not to the company, in the following manner: I would propose that they should proceed to the Cape, as they do at present, with one steamer, and from thence to the Mauritius, and Ceylon, and Singapore; and from Singapore to Swan River, and to King George's Sound, and South Australia, and Port Phillip, and back upon the same route. That line would establish a communication between Australia,

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Australia, and India. and China. Then, as I think there would be sufficient traffic in the conveyance of emigrants to support another steamer, I should recommend that they should send an auxiliary screw steamer, such as has been described, for which that voyage is particularly well suited, direct from England to Port Phillip, touching at St. Vincent for supplies; and then from Port Phillip to Cook's Strait, and from Cook's Strait round Cape Horn to England. I think screw steamers would be particularly suitable to that navigation.

259. With regard to Torres Straits, it has been proposed to go from Sydney to Singapore through Torres Straits; how, in your opinion, is it possible for a full-power steamer to go backwards and forwards through Torres Straits all the year round?—I think it possible, but I think it would be accompanied with considerable danger in the western monsoon.

260. The western monsoon blows from September to April, and then comes the eastern monsoon?—Yes.

261. Mr. *Cowper*.] You suggested that the screw steamers should take the course which would be nearly the longest that they could take from England to Australia; with what view do you suggest that?—I believe that the distances from England to Bass's Straits by the three different routes, by the Isthmus of Panama, by the Isthmus of Suez, and by the Cape of Good Hope, are as nearly as possible the same; I do not think the difference exceeds 100 miles upon the globe, taking the distances upon the great circle.

262. You suggested that a vessel, after leaving the Cape of Good Hope, should go by the Mauritius to Ceylon, then to Singapore, and finally to Sydney, and should return round Cape Horn?—I meant that one branch should go from the Cape to the Mauritius, to Ceylon, to Singapore, to King George's Sound, South Australia, and Port Phillip, and then return upon its own track; the other branch would go from England direct to Port Phillip.

263. You do not suppose that letters would be sent to Australia by that circuitous route?—Not letters from England, but that would afford a second communication from England to Singapore.

264. You proposed it as an inter-colonial route, and not as a direct route from England to Australia?—Yes.

265. Mr. *Divett*.] You made some general suggestions with respect to the management of steam operations of this sort; did you mean to suggest that the Admiralty were not the proper parties to look after these arrangements, and that

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it was necessary to form some Steam Navigation Board to direct them?—I did not mean to say that the Admiralty have not managed this business properly, but I meant to say that the Admiralty is not in a position to manage it advantageously. The peculiar nature of this business requires that it shall be conducted by a person or persons holding office under the strictest accountability to all the parties interested in the success of the management. The Admiralty, being a branch of the Government, is not subject to that sort of responsibility.

266. If you cannot get responsibility in the Admiralty, where do you expect to get it?—I think it possible to make an individual responsible.

267. Mr. *Wilson.*] To whom?—To Parliament, to the public, to Government.

268. Mr. *Divett.*] Where are the funds to come from for these operations?—From the postage.

269. Supposing the postage is not sufficient to carry them on, where are you then?—I think there is good reason for saying that the aggregate amount of the receipts for colonial postage would afford sufficient means for encouraging communications.

270. Then you must believe that the packet service can be made a much more profitable concern than it has hitherto proved to be; are you aware of the whole sum which is paid for the packet service?—I think it is about 600,000 *l.* a year.

271. Are you aware of the whole sum received in the shape of postage in return?—It is about 4 *s.* a mile, I think.

272. Do you mean that we get a postage of 4 *s.* a mile upon the steam-packet lines?—So I understand.

273. Upon what authority do you state that?—The gentleman just now examined informed you that they receive for postage in New South Wales 27,000 *l.* a year.

274. Have you any authority upon which you can state the amount of the postage, and the present expense of the steam service?—I have no intimate acquaintance with the subject myself; I only know it from common report.

275. Mr. *Cowper.*] The plan you proposed was, that a certain individual should be selected to manage all the postal communications of the country with foreign parts; do you contemplate that this individual should have merely administrative functions, or that he should have the power of deciding questions?—He ought not either to have the power of deciding questions, nor of exercising any sort of patronage whatever;

whatever; he should be in the nature of a trustee for all the interests concerned.

276. Would you give to him the decision of a new route, or would he merely execute the decision which some portion of the Government should make?—I would place him in the position of making all those reports upon which a decision should be finally taken, probably by the Government, or possibly by Parliament.

277. Then his duty would be merely to express opinions upon questions relating to postal affairs; is that your idea?—I should adopt very much, with regard to these communications, the arrangement which was made with reference to railways; there was a department formerly for that special purpose, which gave general satisfaction.

278. Then your idea is, that the individual so appointed should make reports upon various lines, and that those reports should be decided upon by Government?—Yes.

279. Has not the Admiralty already much greater advantages for that purpose than any single individual could have? Has not the Admiralty the advantage of scientific officers whom it can consult, and the reports of officers whom it can consult, and the reports of officers in all parts of the world, and more particularly of officers who are concerned in superintending the existing packet service; would this individual that you propose have one-tenth part of the advantages which the present Board of Admiralty possess?—He would have access to the same sources of information as the Admiralty, but his position would be different from that of the Admiralty. He would be responsible not only to Parliament, and to the Government, and to public opinion, but he would lose his office if he should not give satisfaction, or if any reasonable fault could be found with his management.

280. Are you aware that the general opinion is rather different from yours, it being generally considered that the best way to fix responsibility upon an executive office is to give it to a person who is to answer for himself in Parliament?—I am not aware of that.

281. Mr. *Wilson.*] Were you rightly understood to say that you did not contemplate money assistance being afforded by Government to any line of communication?—No, I do not mean that; I mean that it is the exercise of a very dangerous power to grant encouragement to any line; it may happen to be a fortunate application of encouragement, but it may have a contrary effect; therefore there is a great objection to such encouragement at all times; but I think the encouragement

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encouragement given should be limited to the fund formed by the returns from the conveyance of mails in the aggregate; the whole aggregate amount of encouragement should correspond with the whole aggregate amount of receipts.

282. Then you would not propose that the Government should make any advance beyond the amount of receipts from the line?—No; the aggregate receipts for all the lines should constitute the fund out of which encouragement should be given in particular cases.

283. You were understood to say that if the Government encouraged the best line it would not be necessary, and that if they encouraged the worst line it would be injurious?—That is not exactly what I meant to say.

284. Are you of opinion that the Government ought to afford to any one line a distinct encouragement by way of a vote in money to assist in this undertaking?—I think there are several lines that ought to be encouraged, those lines being unable to support themselves upon their own returns.

285. Do you propose that the Government should support more than one line?—Yes, the Government should endeavour to promote a complete system of intercommunication, but I think they ought to use for that purpose only the aggregate returns upon all the lines.

286. Supposing the receipts from any one given line were very large, in consequence of its being the best line, would you contemplate taking the receipts from that line, and apportioning them equally between that particular line, which was thus proved to be the best, and other lines which were not paying so well?—Yes.

287. Supposing there were a deficiency, how would you make up the deficiency?—Out of the aggregate fund.

288. But supposing the aggregate fund was not sufficient for the aggregate expense?—Then it would not be expedient to grant public money for the purpose. I consider this to be a fund arising from a peculiar service, and which ought to be destined for the support of that service.

289. Mr. *Cowper*.] Are not you aware that at present the postage of the letters carried by these packets is not separated from other postage, and that therefore it would be difficult to ascertain exactly what was the amount to be applied in supporting steam packets?—That separation is exactly what I should propose to be made.

290. Are you aware whether that would involve considerable difficulties in the arrangement of the Post-office?—I do not imagine that it would involve any great difficulty.

It

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It is a fund arising out of a peculiar source; it is not like the fund made by the postage between London and Manchester.

291. What is the difference in your idea between the two?—The one is in the nature of a tax upon the conveyance of letters between London and Manchester, falling strictly within the control of Parliament. The other is a tax levied upon the colonies, and according to the custom of Parliament, which induces it to refrain from imposing taxes upon the colonies, that fund ought to be administered exclusively for the benefit of those from whom it is derived, and it should not become part of the Imperial revenue.

292. Is not the postage of letters that go by these mail packets received by the Postmaster-general in exactly the same way as the postage of letters which go from one part of the United Kingdom to another?—Yes; but supposing the colonies of New South Wales and the other Australian colonies to have grown to a much larger degree of importance than at present, and supposing you administer this fund in such a manner as not to give satisfaction to those colonies, and that they pay more for the conveyance of the letters than they ought to pay, it would be looked upon as a serious grievance by the colonies that that tax should be applied for any other purpose than for their benefit.

293. Mr. *Wilson.*] Do you mean the Committee to infer that they now pay a larger amount for the postage than the cost of the transmission of the letters?—Not at present; but if the communication were to become more frequent, and the returns greater, it would be proper to reduce the charge so as to prevent the imposition of a heavier burthen than necessary upon the colonies.

294. Then all you mean is, that the postage of letters between this country and the colonies ought not to exceed the cost of the service to the Government here; that it ought not to be made a source of revenue, but that, as it becomes practicable, the rates of postage ought to be reduced?—I think so.

295. But if at the present moment the actual cost of conveying letters is greater than the actual rate of postage, there can be no pretence for saying that it is a tax upon the colonies?—The whole amount of the receipts at present must be much less than the expense of establishing the communications. The colonies receive better communications than they could afford to maintain from the mere receipts of the postage at present; therefore they have no ground of complaint.

296. Therefore

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296. Therefore there is no pretence for saying that it is a tax upon the colonies?—It would if the receipts increase very greatly.

297. In that case the objection could be obviated by a reduction in the rate of postage?—Certainly that would obviate that objection.

298. You propose, as I understand, that there should be one general fund to which the whole of the receipts of postage by the steam communications should be paid, and that from that fund encouragement should be given to the different steam communications which are thought necessary to be established?—Yes.

299. As at the present moment the whole of the receipts of postage from steam communication are not equal to the whole of the expenditure for steam communication, in what way would you divide that fund? For example, supposing that it costs 100,000 *l.* to convey steam communication in one particular line, and that in another line it also costs 100,000 *l.*, and supposing that the receipts from the one line were 90,000 *l.*, and the receipts from the other line only 50,000 *l.*, in that case, the best line yielding 90,000 *l.* out of 100,000 *l.*, and the worst line yielding 50,000 *l.* out of 100,000 *l.*, would you propose to put the 50,000 *l.* and the 90,000 *l.* together, making 140,000 *l.*, and to give 70,000 *l.* towards the encouragement of each of those lines?—To explain what I have already said, I consider it a good principle to apply all the receipts from the service to the maintenance of the service, taking to an aggregate fund all those receipts, and apportioning out of that aggregate fund such grants as may procure for the colonies and the mother country in common the best system of postal communications. In the limited point of view in which the question is put, it would be merely a question of administration and just dealing, whether you would take from one line a portion of the fund insufficient for its maintenance, and give it to another fund still more deficient in return. I think it would be a questionable proceeding. But then I think there would be no question, that it would be perfectly just, the mother country undertaking to establish a general system of communication, to take the surplus upon one line beyond the necessary encouragement to maintain it, and to appropriate it to another line of communication, because all lines of communication act upon one another; the whole form a system, from which system each individual branch or line derives its advantage.

300. Supposing

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300. Supposing the fact to be, as it really is, that at present not one of those lines pay their expenses, do not you think that it would be a just cause of complaint by any one of the colonies supporting a particular system of steam navigation to find, when the whole receipts from that line were insufficient for their own purposes, a portion of them devoted to another line which was inferior to their own?—I think so; that did not form part of the original idea which I took the liberty of throwing out.

301. You were understood to say that you would put all those receipts into one fund, and that you would distribute those receipts to the various lines of communication according to some view which you took of the importance or necessities of each line?—No, I meant that the whole should form a fund, and that each line should, out of its own receipts, be indemnified in the first place for its expenses, and that if there were any surplus, that surplus should be appropriated to the promotion of other branches of communication.

302. In the event of there being a deficiency altogether, as between the expenses and the receipts, how would you make up that deficiency?—I should not undertake generally to promote all lines which might be projected at the expense of the Imperial Treasury, but in certain cases it might be very good policy to establish, even by a grant from the Treasury, certain lines of communication for political objects; before one can give a direct answer to that question, the circumstances of the line would have to be considered.

303. You come back at last to the necessity of a Government grant?—Only in certain cases, where, for the sake of imperial interests, the Government has an object in view.

304. Mr. *Corry*.] Do not you imagine that to be the case with reference to all communications supported by Parliamentary grants, that they are supported for imperial purposes?—I believe that the grants which have hitherto been made have been very judicious and highly beneficial, but we have now advanced a considerable distance in the management of this business, and it is worth while to consider whether it would be better to establish a different system of management from that which has existed; I think there are some reasons that would make it expedient to do so.

305. Of all the lines which have been discussed to-day, which is the line which in your opinion is most deserving of a grant from the Government on account of its great political importance, and the advantages which it offers throughout the whole line?—In my humble opinion, the line of the greatest

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greatest political importance to the Government is the line by the Cape. That is the line, for general purposes, most deserving of the consideration of the Government.

306. When you spoke of the Cape line before, you included in the range of the Cape line the Mauritius, Ceylon, and Singapore; therefore, in your opinion, the consideration of the Cape line, with reference to political and public advantages, includes correspondence with our eastern possessions? —With our eastern possessions and inter-colonial communication.

307. Are you of opinion that with reference to our large empire in India and our extensive communications with China, and now with the western coast of North America, the political advantages of the route by the Cape are greater than those of the more direct route through the Isthmus of Suez? —The superior importance of the Cape line arises out of its being an independent line, a line that must exist in peace and in war. It is the line which will in the highest degree promote the prosperity of your Australian colonies, it is the line by which alone you can send troops, and it is the line by which alone you can bring home the produce of India and Australia.

308. The question had reference not to commercial advantages, but solely to the political importance of rapid communication under ordinary circumstances with our empire in the East: which, in your opinion, would be the most desirable line with that view only; would the direct communication by the Isthmus of Suez, occupying about 40 days, or the circuitous communication round the Cape, be of the greatest importance to this country in average times? —I have no hesitation in saying that the Cape is, in my apprehension, by far the most important of all the three lines.

309. Lord *Naas*.] To Australia?—To the whole group of our possessions in those seas.

310. Mr. *Cowper*.] The Committee are not to understand that you propose it as the most rapid communication, either with India or with Australia, that the vessel should go round Cape De Gallè, and then down to Sydney?—Not the most rapid.

311. *Chairman*.] You look at the present communication by Suez as being established?—Yes.

312. You are now looking to the question of Australia alone, and you think that the Cape line is the most important in point of general policy to be maintained; but at the same

same time you do not mean the Committee to understand that you think the whole of the communications with the east should be carried *viâ* the Cape of Good Hope?—No, certainly not at present; I think those three lines should be maintained.

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313. Mr. *Wilson.*] I understand you to say that in your opinion the Government might from political considerations, but not from any other considerations, make a grant of money from the Imperial Treasury for those purposes. Then I asked the question, which of the various lines which have been discussed to-day was the most important with reference to political considerations only; whether the line through the Isthmus of Suez, which carries you to our Eastern empire in 40 days, or either of the other lines?—I think upon a general view of all the interests concerned in Australia and India, and all the circumstances attaching to each line, considering the chance of the one being interrupted in war, and the other not being liable to interruption, the Cape line is the most important of the three.

314. Upon political considerations?—Upon general political considerations, the Cape line is, I think, the most important line.

315. Mr. *Corry.*] You stated that in your opinion public aid should only be given to the line that is of the greatest national and political importance; would it be a correct inference from the opinion you have just expressed, that Government aid should be withdrawn from the Suez line, and confined only to the line by the Cape?—I think the Cape line is a very proper subject for Government encouragement, and that no greater degree of encouragement should be given to the Suez line than will, with the assistance of private traffic, maintain it.

316. Mr. *Willcox.*] You have alluded in your previous evidence to the circumstance of the Mail Contract Steam Companies making handsome dividends; now considering the hazardous nature of steam property, and the uncertainty of success in the opening of a new line, what do you call a handsome dividend?—I call seven-and-a-half or ten per cent. a very handsome dividend.

317. Are you aware that the highest dividend that has been paid by those companies has not been more than eight per cent.?—I think the companies which have divided eight per cent. have made a very good contract with the Government.

Mr. *John Fitzgerald Leslie Foster*, called in; and Examined.

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318. *Chairman.*] IN what part of Australia have you resided, and what opportunities have you had of knowing the wishes of the colonists as to steam communication with England?—I resided principally in Port Phillip, but I was a great deal in Sydney. I may state, with reference to the means I have of knowing the views of the colonists, that I represented the district of Port Phillip in the Legislative Council at Sydney for several years, so that I saw a good deal of what took place in committees in the council upon the subject, and I was well acquainted also with the opinions of my own constituents.

319. Do you consider the interests of the colonies to be identical upon this question?—No, I do not; I think the interests of the colony of New South Wales would be perhaps better consulted by the line through Torres Straits, the Singapore line; I look upon the Panama line as exclusively desirable for New Zealand; then I think the interests of all the other colonies are better consulted by a communication from the westward.

320. Are you aware what sums have been voted by the legislature of each colony in aid of steam communication?—£. 6,000 was voted by the legislature of Sydney in aid of a communication *viâ* Torres Straits. In South Australia they have voted 3,000*l.* in aid of a communication *viâ* the Cape of Good Hope. The colony of Victoria has never yet met under its own government; it has only been established one year; but I think I may take upon me to say that they would vote at least an equal sum with South Australia, and that they would decidedly prefer to have a communication either *viâ* the Cape of Good Hope or by Cape Leeuwin.

321. Do you think that there is any probability of those sums being increased?—I think the colonies would increase them if they found it absolutely necessary, but at the same time I should say that I think the sums voted are very fair, considering the revenues of the various colonies. There has been a small sum also voted by Van Diemen's Land of 1,800*l.*, but I believe that that is more with a view of establishing a branch line from Melbourne to Van Diemen's Land than given directly to aid Government communication from home; but no doubt they would contribute something, if it were fairly laid before them.

322. Lord *Naas.*] Have the colonies at present contributed anything

anything towards inter-colonial communication?—There is a post twice a week from Sydney to Melbourne over land, and there is a post from Melbourne to Adelaide over land. There are postal communications between all the Australian colonies. Mr. *J. F. L. Foster.* 10 April 1851.

323. Supported by the colonial governments?—Yes.

324. *Chairman.*] Can you state the relative trade and population of each of the Australian colonies?—I have looked at the relative imports and exports of New South Wales, and of the other Australian colonies, which latter I consider all to have one interest in this question; therefore I have added together the trade of all our southern colonies, to compare them with those of New South Wales. I find that the population and the imports and exports of the southern colonies each very much exceed those of New South Wales, and the trade and population of the southern colonies are increasing very rapidly indeed in comparison with New South Wales.

325. To what do you consider that great increase of population and trade in the southern colonies is owing?—They are naturally much finer countries than the northern, and they are younger, and therefore there is more room for development.

326. Are there not some mines opened?—There are in South Australia, not in Port Phillip.

327. Which do you consider the best, as a postal route, of the three lines which have been before the public?—I think the best, as a postal route, is that by which the greatest certainty would be obtained, viz. by Singapore and Cape Leeuwin. That would be the most advantageous, upon the whole, for a postal route, because it would consult the interests of the greater number of the colonies.

328. Are you speaking your own opinions, or the general opinions of the colonists?—I am speaking my own opinions, and, I believe, the opinions of the southern colonists generally.

329. That is your own opinion as regards the real interests of the colonies?—Of the group of colonies; not of New South Wales alone.

330. Which line do you consider the most important, as far as the Imperial interests of Great Britain are concerned?—I should say that the line by the Cape of Good Hope would be the most important to the Imperial interests of Great Britain, for the reasons which have been stated by the preceding witnesses.

331. Looking upon it as an emigrant line?—Yes. The only route that would serve as a passenger line for that class

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of passengers, to any amount, would be the Cape of Good Hope line. Passenger and emigrant traffic I look upon as nearly, if not quite, as important as postal communication, considering the condition of the colonies as being so much dependent upon emigration.

332. Do you consider the trade between India, China, and Australia to be of increasing importance to the colonies?—Of very great importance indeed; I believe we derive a most valuable class of settlers from India; invalids would come to Australia to recruit their health, instead of going to the Cape of Good Hope, many of whom would settle amongst us.

333. Have you any of that class as settlers now?—They are not very numerous, but there are some; some of our best settlers are derived from that source.

334. Are you aware of any great inconvenience which is experienced in the monetary transactions between this country and the colonies, owing to the present uncertainty of communication?—I think not any in particular; of course it would be better if we could reckon with certainty upon the days when our letters and goods would arrive.

335. Is not there some inconvenience relative to drawing bills?—I think the inconvenience in that case would be rather increased by a quicker postal communication; the drafts would come before the goods.

336. Have there been any arrangements for regular packet communication by sailing packets between any of the Australian colonies and Singapore?—No, none.

337. Have there been between this country and Australia?—There were some sailing vessels sent out once a month; it is abandoned now. About two years ago that arrangement was in force, but those Post-office packets were proverbially slow. For instance, it is stated, in the evidence of the postmaster at Sydney, that the average passage of the Post-office packet was 124 days, and the average of the common merchant ships was 112.

338. Have you turned your attention to the proposal made by the Pacific Steam Packet Company with respect to the Panama line?—Yes, I have read some of the papers upon the subject. I stated before that I thought that that line would be perhaps more conducive to the benefit of New Zealand than any other, because it is the fastest mode of communicating with that colony; I do not think it is adapted for the Australian colonies.

339. Lord *Naas.*] Do you think that the Australian colonies

nies would contribute towards that line?—I think they would be better off with the Panama line than with none; therefore, if it were settled that they were to have no other, and they could not have that without contributing, I think they would contribute; but they would much rather contribute to either of the other three lines, I think. Mr. *J. F. L. Foster.* 10 April 1851.

340. Mr. *Divett.*] You attach great importance to intercolonial communication by steam?—No doubt.

341. You think great convenience would result from getting a steam communication with Singapore, taking all the colonies in the route each way?—Yes.

342. Has not the progress of Victoria and South Australia very greatly exceeded that of New South Wales?—No question of it.

343. Lord *Naas.*] Have you turned your attention to the scheme for carrying the mails to Australia from Singapore out by the western coast, and returning by Torres Straits, so making a complete circuit each time?—I think that is objectionable; for I do not see, unless great delays were made at those intermediate ports, how people could answer their letters by the same post.

344. Mr. *Currie.*] In what year were the sums which have been mentioned voted by the colonies for establishing this communication?—In the year 1846 the first sum was voted, and that has been continued ever since, but it has never been claimed by the British Government.

345. You were understood to say that 3,000*l.* was voted by South Australia for the communication by the Cape?—Yes; I hold in my hand the resolutions of the South Australian legislature upon the subject.

346. Here is a petition presented to the House of Commons, which you have signed, which says, "In conclusion, your petitioners desire to inform your honourable House, that several Australians, entirely doubting the sincere intention of Government to open a steam route within a reasonable period, are now contemplating an appeal to America, in order to induce her to undertake a duty which they consider has been virtually declined by England." Has there been any appeal made?—No, there has been no appeal made, but I know that it was contemplated.

347. Who are the parties to that appeal?—I am aware of two or three who were speaking of it, but it was not done. While on the subject of American communication, perhaps the Committee will allow me to hand in a Report of the Committee on Naval Affairs, appointed by the House of Representatives

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Representatives of the United States, speaking of their claims and intentions to possess themselves of the Pacific. They evidently look upon themselves as the future owners of the Pacific, in a spirit of rivalry with Great Britain; they deprecate that those who have possessed themselves of the Atlantic should possess themselves also of the Pacific; so that if such an application were made, they would probably accede to it.

348. Lord *Naas.*] Do you believe that if this communication with Australia is not speedily established by the British Government, application will be made to the American government from Australia?—I think it is extremely probable.

349. Mr. *Divett.*] Do you think it would be attended to if it were?—Looking at that report, I think it would.

350. Would not the natural course for the Americans to take, with reference to steam communication in the Pacific, be to take a northern line rather than a southern?—If they were invited to the south I think they would go there; they have above 700 whalers there.

351. Do you think that the Americans would establish steam communication the whole way, from Panama across the Pacific to Sydney, without having any intermediate ports where they had any business to transact?—If they found it pay I have no doubt they would, and we have a company at Liverpool who say that it would pay for a screw steamer.

352. Mr. *Scott.*] Are you able to give any account of the whaling fleet that the Americans have in the seas round the Australian group?—I have been told that in the Southern Pacific Seas they have 700 whalers.

353. Large ships?—Very large.

354. Sufficient to induce them to seek for a regular steam communication in that quarter?—I should not have thought so till I read that report, which I hope the Committee will look at.

355. Mr. *Cowper.*] Do you think it likely that any considerable American trade would be carried on between the Isthmus of Panama and Sydney?—I should think not; the difficulty of transhipment would be too great. I am not aware of the trade between the western coast of America and Australia at present.

356. Would that supposed line have to get its receipts from passengers and postage alone?—I am not aware of any other source.

357. Mr. *H. Currie.*] When the line was contemplated from Australia to the Cape, was it contemplated by screw vessels,

vessels, or by paddle vessels?—By screw vessels; I do not think paddle vessels have ever been contemplated. Mr. J. F. L. Foster. 10 April 1851.

358. Do you think that the colonists would receive the proposed communication by the Cape by screw vessels with great gratitude?—The southern colonies would.

359. Immediate communication with England is of great importance to them, is it not?—I think it is the most important question now affecting the welfare of the Australian colonies.

360. Is the trade with Australia carried on principally with capital from England, or with its own capital?—There is a great deal of both; there is a great deal of English capital embarked in the trade.

361. With respect to bills, the usage upon bills might be shortened, might it not?—I think we should have to come into a new practice; at present we draw at 30 days' sight; we might have to draw at three or four months if the passage of the bills were expedited, so that the bills arrived here long before the goods.

362. Mr. *Divett.*] Is not the great object in all arrangements of that sort certainty as to the course of post?—Certainly.

363. Mercantile affairs soon adapt themselves to such changes, if the course of post is only regular?—Certainly.

364. Is not that the case especially with reference to the course of exchange?—That is so.

365. Mr. *Wilson.*] In the event of the post being very much expedited you would probably adopt the plan which is followed in India, of accepting bills upon the receipt of the bills of lading?—No doubt; we have a system very nearly akin to that at present.

366. When you spoke of American aid being given for establishing a communication with Australia, did you mean the aid of the American government, or did you contemplate some private commercial association?—The application alluded to, was to the American government.

367. Are you aware that the American government are exceedingly averse to giving any kind of encouragement to steam communication of this kind with any part of world?—My impression was exactly the other way.

368. Are you not aware, that within the last month the Congress have refused to grant to the American line of steamers to Liverpool what they had previously promised?—I understood that a number of applications for aid were refused by the last session of Congress, on the ground that

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it was too late in the session, and that they would take it up again. This report from the committee of the American Congress strongly recommends that that money should be granted.

369. Mr. *Cowper.*] Is it not expected by persons acquainted with what has passed in Congress that the grant which was refused this year will be made next year?—So I have heard.

370. Mr. *Wilson.*] Were your rightly understood to say, that in your opinion the Singapore line, as a postal line, would be the best for the general interests of Australia?—Singapore by the western route.

371. But as a political line, you think that the Cape would be the best?—Yes, I think it would.

372. You based your opinion upon the fact, that it would be the best line for conveying emigrants?—I look upon that as its chief recommendation.

373. Would you contemplate, in establishing steam communication between this country and Australia, that ordinary emigrants could be carried by so expensive a ship as would be employed in postal communication?—I understand that it is part of the proposal of the Screw Company round the Cape to carry them at 10 *l.* a head.

374. Mr. *Currie.*] If the postal communication by the Cape were as quick as that by Singapore, which should you prefer?—I should prefer the line which combined both advantages. I should even put up with some small disadvantage in postal communication to get a good passenger communication.

375. Lord *Naas.*] If you were returning home at present, would you not prefer a vessel in which you had no chance of transhipment?—I think the transhipment affects a man travelling himself much less than it affects goods.

376. Mr. *Currie.*] Generally, the colonists would prefer the cheaper line?—*Ceteris paribus*, they would, certainly.

377. Mr. *Wilson.*] Looking at the advantages which the South Australian colonists look to from postal communication with various parts of the British empire in the East, and with the mother country, which of the proposed lines, in your opinion, taking passenger traffic and postal traffic together, would be the best line to adopt?—I am not competent to give an opinion upon nautical matters. If all that we have heard to-day as to the certainty of screw steamers being able to navigate the Indian Ocean to the Cape of Good Hope against those westerly gales is correct, I have no doubt that

that the Cape route is infinitely superior; if, on the contrary, it does not answer as a postal route at all, as I have heard people allege, then I might alter my answer.

378. Mr. *Cowper.*] If you had to balance the advantage of cheap communication with England by the Cape against the advantage of a communication with India by Singapore, you would prefer the advatage of the Cape communication, provided it is certain and regular, and tolerably quick?—Certainly.

379. Then you do not anticipate any great advantages to the colony from steam communication with India?—I anticipate very great advantages, but I think the advantages of quick communication with England are greater.

380. The facility afforded to emigrants by the Cape line would in your opinion be of greater advantage to the colonies than the facility afforded to persons coming from India by Singapore?—I think it would be of great advantage, but I am not underrating the importance of the Indian communication, which would be very great.

381. Mr. *Divett.*] That is very important, on account of the increasing trade between those colonies and India?—No doubt.

382. That trade is increasing very rapidly?—So I understand.

383. Especially with South Australia?—So I have heard.

384. Mr. *Henry Currie.*] As the ships go with copper and other things, they can take letters?—That is the only mode of communication that we have at present.

385. Mr. *Divett.*] That is the way by which quick communications come home from Australia to this country?—Yes.

386. Have you occasionally had communications in that way in less than three months?—I came home myself in less than three months by India.

387. But it is very uncertain?—It is very uncertain as to when you may get a ship.

388. To what part of India did you come?—To Madras.

389. How long were you between Melbourne and Madras?—Forty-two days. I went round by Cape Leeuwin. We were 14 days going round by Cape Leeuwin.

390. Was the 42 days considered a long passage?—About the average. There is one remark which I wish to make, that those proceedings in the Legislative Council in Sydney express solely the views of New South Wales. I believe at the time when those resolutions were passed I was the only resident of Port Phillip in the Council. Of course there was

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no doubt, as I before admitted, that New South Wales interests would be more consulted by the Torres Straits route. There is no question which way the Council of that colony would vote.

391. You have no doubt, from your connexion with Port Phillip, that the opinion of the legislature of Port Phillip would be strongly in favour of the western route?—It would be very strongly in favour of a western route.

392. It would not be in favour of the route through Torres Straits?—No.

393. Lord *Naas.*] Would they prefer the Cape route to Torres Straits?—I should say they would decidedly; but I am not sure that they would prefer the Cape route to the route from Singapore *viâ* Cape Leeuwin.

394. Mr. *Cowper.*] Would they prefer the shortest line, independently of the direction in which it might go; supposing the line of which you have spoken, by the Cape of Good Hope, not to be the shortest one, would the Port Phillip colony prefer that line, even though it were longer than the route by India?—No, I do not apprehend they would.

395. Their chief desire would be for the shortest route, but if they had a selection between various routes of equal length they would then prefer the one by the Cape?—I think so.

396. *Chairman.*] Do you think that the advantages of the line by the Cape of Good Hope are such, that even if that communication were shown to be longer, perhaps to the extent of three or four days, than the line by Suez, they would still prefer the Cape line?—I think they would. For myself, I should willingly make a sacrifice of time in order to gain the very great advantages of the passenger traffic. It is a question of how much time would be sacrificed.

397. Admiral *Bowles.*] You would prefer that which combined the greatest advantages with reasonable punctuality?—Certainly.

398. Mr. *Divett.*] Especially if screw steamers could afford to take passengers at the rate at which it is said they can?—Yes; that would be one of the advantages.

399. Mr. *Wilson.*] Those, of course, would be emigrants, not cabin passengers?—If they can carry emigrant passengers at that price, they could carry cabin passengers at proportionably higher prices.

400. Is the communication between Suez and India very much

much increasing, by civilians coming to Australia for short periods?—No, very few come down. Mr. *J. F. L. Foster.* 10 April 1851.

401. Is there not a considerable trade between Australia and India in horses?—There was a few years ago; I do not think it is going on at present; there were a great many horses sent about five or six years ago, but I think not recently.

402. Lord *Naas.*] Do you think that if steam communication was established with India, those horses would go by those large steamers?—I have no doubt of it.

403. There is a large trade in tea?—Yes, very large from China to Australia.

Martis, 15° die Aprilis, 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. James Wilson.
Mr. Divett.	Sir James Hogg.
Mr. Henry Currie.	Mr. Scott.
Mr. Willcox.	Lord Naas.
Mr. Mangles.	Mr. E. H. Stanley.
Admiral Bowles.	Mr. Henry Berkeley.
Mr. Plowden.	

VISCOUNT JOCELYN IN THE CHAIR.

Mr. *Edmund John Wheeler*, called in; and Examined.

404. *Chairman.*] HAVE you been connected with the trade of the Australian colonies?—With South Australia and Port Phillip. Mr. *E. J. Wheeler.* 15 April 1851.

405. Have you been there yourself?—I have not.

406. Can you speak of the views generally held by commercial men there with reference to steam communication?—They are all very anxious for it. Though I have not been there myself, I have been connected with South Australia ever since the year 1836.

407. What period of time does it take now for communications by letter between Great Britain and Sydney?—I should think four months; it is sometimes less, but it is very frequently longer; I mean four months in going out.

408. And.

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408. And what in returning?—From four to five months.

409. What is the average time of reply to letters from this country?—It would not be safe to reckon it under from eight to ten months; replies have come occasionally in seven months, but we look upon them as wonderful things.

410. Do you find any great inconvenience from those tardy communications?—Most assuredly; remittances are delayed, orders are delayed, and every kind of business is impeded.

411. Have you turned your attention to the proposal which has been made for opening communication with Australia by means of screw steamers?—I have in a slight degree.

412. What is your opinion upon it?—I have a doubt as to their power with regard to making the voyage back; and as I am not much of an engineer myself, I am rather disqualified from expressing a confident opinion upon that point.

413. What is the general view of commercial men in this country, with reference to communication carried out by screw steamers?—I believe that it would be rather preferred for us to know a little more of the result of those experiments which are making *viâ* the Cape. The winds from the Cape of Good Hope to Australia set very much from the west for a very considerable portion of the year, and the voyage from the Cape of Good Hope to the Australian colonies is usually made in from 32 to 35 or 36 days, but the return voyage is nearly twice as long.

414. Do you consider that the intercolonial trade between the Eastern Archipelago and Australia is of very great importance?—I do.

415. In what particulars has that trade increased latterly?—There are constant communications between Singapore and Batavia, and the Australian colonies, for the purpose of taking supplies of tea, sugar, and other eastern productions; and since the copper mines have been discovered, and smelting works have been commenced in South Australia, there are considerable shipments of copper now made direct from Adelaide to Singapore, and to the Indian presidencies. In fact, I believe the people connected with India feel the effect of the import of copper direct from Adelaide very materially, and it will increase.

416. Do you believe that much of that traffic would find its way into the steamers if there was steam communication between Singapore and Australia?—I do.

417. Can

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417. Can you speak to the rates of passage from London to Australia?—At present there is a complete rage for cheapness, and persons are now advertising to take steerage passengers from London for 12 *l*; the highest rate for a steerage passage is 18 *l*. to 20 *l*. A cabin passage may now be got at from 35 *l*. to 60 *l*. or 65 *l*., according to circumstances; 65 *l*. or 70 *l*. would be the extreme price.

418. What is the charge for an intermediate passage?—Some people call "intermediate" now which is no better than a steerage passage; that would be about 15 *l*.; but from 25 *l*. to 30 *l*. or 30 guineas would be the rate for what is properly called an intermediate passage.

419. Do those sums include provisions?—They do.

420. What is paid for a best cabin passage?—If by the term "best cabin passage," is meant what I should call a best cabin passage, in a good ship, with proper accommodation and ample provisions, I should say from 60 *l*. to 70 *l*. would be the extreme price.

421. To Van Diemen's Land or New Zealand is it much more?—It is rather more than less; there is less competition.

422. Is there a very large class of persons who pay those higher rates?—Very few; people generally want to go cheaply rather than to go comfortably.

423. Then you do not think that steamers could reckon upon a large passenger traffic from England?—Certainly not.

424. Not even by the Cape of Good Hope?—It would depend upon the rates of charge.

425. But certainly not by the Suez line?—Certainly not; persons going out generally have families, larger or smaller, and quantities of baggage, therefore cheapness is a very important thing to them.

426. With reference to the return passage, is there a class of passengers returning from Australia who would be likely to take advantage of a more comfortable and expeditious passage at a higher price?—There would be many more of them; persons coming home are generally those who have made a certain property and money, and are more willing to spend it in this way; in fact they have more to spend.

427. Can you speak to the present rate of freight from London to the Australian colonies, Adelaide, Port Phillip and Sydney separately?—The rates to those three ports are pretty much about the same; for dead weight, such as iron lead, or nails, it is 15 *s*. to 21 *s*. a ton of 20 cwt.

428. Wha

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428. What is it on goods?—From 25 *s.* to 35 *s.*, or up to 40 *s.* per 40 cubic feet for measurement goods.

429. What is it to Van Diemen's Land or New Zealand?—Rather more; to New Zealand especially.

430. Do you consider that any great proportion of the goods usually shipped to Australia would bear a high freight?—No, very few.

431. What class of goods would bear a high freight?—What would be called fine measurement or piece goods, such as valuable goods from Manchester, &c., silks, and things of that kind; but it is a very small proportion of those that go.

432. What is the produce usually imported from the Australian colonies in this country?—Wool, oil, tallow, copper, copper ore, lead ore, bark, gum, and hides, and there are now occasionally preserved meats from Sydney.

433. Those articles you think could not bear the freight that the steamers would necessarily charge?—They would not.

434. What line along the coast of Australia would be the most convenient for these communications?—Along the south coast of Australia, most assuredly.

435. Touching at what points?—My idea would be to make it very comprehensive. You might stop off King George's Sound, and there land the letters for Swan River, or Western Australia, there being an overland communication, I believe, from King George's Sound to Perth, and then proceed to Adelaide. As South Australia numbers nearly 70,000 people, the mails for that colony would be important.

436. Mr. *Mangles.*] Are you speaking of a vessel coming from the Cape?—Or from Singapore; in either case I would recommend the southern route. Then she should go to Port Phillip, where, if it were desirable, the mails for Sydney might be landed, because there is already a communication, I believe, overland, or one could be made, from Melbourne to Sydney. And then I do not see why the steamer could not cross to Launceston, and there land the whole of the mails for Van Diemen's Land, there being a mail-coach road, I understand, across from Launceston to Hobart Town, and then proceed on to Sydney. That has occurred to me as a comprehensive measure.

437. Then you would leave out New Zealand altogether?—This might be a branch communication either from Hobart Town or from Sydney to New Zealand; but I apprehend that the principal steamer would not be justified in going on to New Zealand.

438. *Chairman.*]

438. *Chairman.*] Do you think that the homeward mail should take the same route, reversed?—That would depend upon whether she had to return *viâ* the Cape of Good Hope or to Singapore. My reason for mentioning such a comprehensive scheme is, the probability that each of the local governments might make considerable grants towards such a measure, and there would be a very great interchange of local trade.

439. Do you know what is considered the usual passage from the Cape of Good Hope to Adelaide?—From 32 to 36 days is considered a fair average passage; I have had a ship of my own do it in 33.

440. The outward passage?—The outward passage.

441. Mr. *Wilson.*] What is the average passage back?—I think you must allow two months at least.

442. You think that is a fair calculation for the average?—I should not like to say less as an average.

443. *Chairman.*] You are aware that there is a considerable trade between Singapore and Batavia and the Australian colonies?—There is a considerable trade; they bring sugar, and tea, and rice occasionally, though not much. The people generally send those ships the western and southern route, making Adelaide first, and selling what they can there, and then going on to the other colonies.

444. Which route do the vessels usually take in passing between those points?—I believe they always go the western and southern route; I have never heard of any instances of their doing otherwise.

445. They never go first to Sydney?—No, I believe, never, if they are going on to the other colonies.

446. Do you believe that any of that traffic would be transferred to the steamers, if a line of steamers were established between the Australian colonies and Singapore?—I think the greater portion of it would.

447. Including merchandise?—Including merchandise. I should say the vessels at present employed are principally small schooners, in which speed is a great thing. The intercolonial rates of passage-money and freight are much higher in proportion than the freights from this country.

448. Have you considered the proposals made by the Pacific Steam Packet Company?—Very slightly.

449. In your opinion the route from Singapore to Sidney has a preference for trade and postal communications?—I think so.

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450. Have you any direct or indirect interest in any of the steam packet companies?—Not the slightest.

451. Mr. *Plowden.*] With reference to the period occupied by the passage out and home, to and from Australia, you were understood to say that from the prevalence of westerly winds between the Cape and Australia, the homeward passage would be a protracted one?—It would.

452. Can you state the latitude taken in that passage; is it between 34 and 40?—I believe it is, homeward.

453. If the vessels were to take a higher latitude, would not that objection be obviated?—I apprehend not, unless they came to the northward in order to get the trade winds. I had a vessel of mine last year that took six weeks to go from Adelaide to the Mauritius. There is frequently considerable delay in doubling Cape Leeuwin at the south-western corner of New Holland; sometimes it may be doubled in a few days, but very often it takes three weeks.

454. The question had reference to taking a higher latitude in returning home?—In each case that cape has to be doubled.

455. Mr. *Scott.*] In what line of business are you?—I am at present a merchant and agent connected with the Australian colonies; I am also manager of the South Australian Banking Company.

456. Residing in London?—In London; in Old Broad-street.

457. Have you ever been in the Australian colonies?—I have not.

458. Have you any nautical experience upon this subject?—If by nautical experience is meant experience acquired by being at sea, I have not; but if it means the experience acquired by acquaintance with the voyages of vessels, and perusal of their log-books, and conference with captains, I have.

459. You have not made the voyage?—I have not.

460. You spoke of steam vessels not being able to reckon upon many passengers; you would think therefore that those who undertook this service would be likely to do it at a loss?—I think they must have considerable assistance from the Home Government.

461. You think they must charge very high freights?—I think they must not attempt to charge high freights.

462. You have not been in these colonies?—I have not.

463. You spoke of the route that should be taken by the vessels; you have no other experience upon that subject than

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than any other gentleman might have who has turned his attention to the subject?—Except as having been practically engaged in trade with those colonies now 15 years, and probably a mere theorist would not have so much acquaintance with the subject as those who have that practical acquaintance with the shipment and other operation of goods.

464. Mr. *Divett.*] You are a shipowner yourself?—I am to a small extent.

465. You have some fast ships in the South Australian trade?—Fair sailing.

466. What time have those ships generally taken in their voyages to Australia?—The quickest was 102 days from Gravesend.

467. That is, not touching anywhere?—No.

468. From land in England to land in South Australia?—If taken from land in England it would be quicker; because the custom is to reckon from the last land sighted in the Channel, but I take it from Gravesend.

469. You have examined the logs of your ships on their return?—Always.

470. Can you speak to the time taken upon the return voyage from Adelaide to the Cape?—From 55 to 65 days.

471. Going the other way, can you say what the time taken by your ships has been from the longitude of the Cape to Adelaide?—From 32 to 35 or 36 days, speaking off-hand. I know one vessel that did the voyage in 33. I know another ship, with which I had nothing to do, which did it in 35.

472. Returning from Adelaide to the Cape the time has varied?—Yes, from 55 to 65 days generally.

473. Are you speaking now of the time taken supposing they touch at the Mauritius on the return voyage?—No, direct.

474. As direct as the wind will enable the ship to take that course?—Yes.

475. In making the passage by the Mauritius upon their return, what time has it taken?—Last year the "Competitor" was about six weeks getting to the Mauritius, and I believe from the Mauritius to the Cape she was upwards of 30 days, it being the winter season; she was nearly lost.

476. At this time what is the date of the last letter from Adelaide?—The 15th of November, overland.

477. What is the date of the last letter from Port Phillip?—The 10th of December, *vid* Ceylon. There are direct dates by

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by one of the ships from Port Phillip of the 5th of December, but they always come round Cape Horn.

478. What is the last date by a ship direct from Adelaide?—I think the 28th of September; at this time of the year, there are few ships coming direct from South Australia to England; we are expecting a ship every day, which would leave in December.

479. In the direct trade between Adelaide and England, ships do not return round Cape Horn?—No, very rarely; one or two instances have occurred.

480. It is only the ships that go to Melbourne and to Sydney that make their return voyage round Cape Horn?—Yes, and I believe from Van Diemen's Land.

481. Assuming five months for the voyage home, you could not at all calculate upon the course of the post as being less than nine?—I should allow 10 months.

482. What is your opinion as to what the course of the post would be to Adelaide, assuming that the route from Singapore to Adelaide were adopted from England?—About 70 days, or 75, each way. I should estimate that the course of the post would be about five months.

483. You think it could be reduced easily to five months taking that route?—I do.

484. Have you given your attention to the time that the schooners which run up to Singapore, and to the ports of India, with copper, take upon their voyage?—From five to seven weeks; sometimes longer.

485. What is the shortest time in which you have known letters to be received from Adelaide by that route?—Two months and three-quarters; but very rarely.

486. Was not that almost a solitary instance?—It was. I once got a letter out in that route in three months, but it was from a most extraordinary occurrence; from a ship being at Singapore on the point of sailing when my letter reached Singapore overland.

487. Have not you found, as a banking manager, excessive inconvenience in your commercial operations from the excessive uncertainty of the post?—Most assuredly.

488. Has not it obliged you frequently to have specie going both ways in the course of the regulation of the exchanges?—It has.

489. Which, in the event of the course of the post being reduced to four or even five months, would be almost entirely obviated?—It would. Very recently, in the case of the South Australian Banking Company, specie which was in the

the course of shipment need not have been sent if we had heard quicker.

490. Had you not occasion, a short time ago, to send 20,000 *l.* in specie in two ships, the necessity for which would have been altogether avoided if you had had a quick post?—It would.

491. Mr. *Currie.*] You said you are connected with the shipping interest yourself?—Slightly.

492. And you have said that the steamers could not take passengers at such a reasonable price as sailing ships?—I think not.

493. You said that ships go in about four months to Sydney, and back in about five months?—That is from London, not from Plymouth.

494. How far south do they go?—I believe rarely below 40; but I am not competent to say what other vessels do. I could refer to the log-books of my own vessels if it were desired. In the case of the "Constance," which went the great circle sailing, and made a rapid passage, they went so far to the south as to come into such dreadful weather, and there was such illness amongst the passengers, that I understand the Commissioners have peremptorily prohibited vessels from going below a certain degree. My captain told me that he was in Adelaide when the "Constance" went in, and that nearly half the emigrants had to go to the hospital, in consequence of the awful weather they had had.

495. You said that the highest rates are about 65 *l.* for first-class passengers, and 12 *l.* the minimum?—For steerage.

496. Do you think that passengers would prefer going in a steam ship, if they could go out in half the time for the same price?—Certainly.

497. With regard to the return voyage from Australia, all your information is only gathered from books and from captains; you have not been there yourself?—I have not been there myself, but I have had many friends who have been, and my ships have brought many passengers home.

498. Mr. *Divett.*] Is there any increase of insurance in consequence of ships making the passage by what is called the great circle sailing?—I do not know.

499. Have you turned your attention much to the rates of insurance with England and the colonies on intercolonial passages?—Yes.

500. What difference do you find the insurance offices make in London for the risk through Torres Straits and by

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the other route?—Many risks *viâ* Torres Straits they would not insure at all if they did not know the ship, or if the captain was one that they were not acquainted with; some offices will do it, and some will not; but I believe that where it is done, the difference is more than twofold.

501. Mr. *Currie.*] Would not they insure in letter A?—They are very shy of Torres Straits; it is a risk that they will not take very much of, if they take any.

502. Mr. *Divett.*] Did you understand that there had been great wear and tear in the ships that had made the passage on the great circle sailing so rapidly?—I do not know; I know it was currently reported that they had had most awful weather; that was the term used; in fact, it was said that the passengers were almost battened down.

503. Do you insure your ships in the Australian trade by the year?—For the voyage out and home.

504. What is the rate of insurance for a first-class ship for the voyage?—I insure mine out and home at four per cent.; ships of a different class will be more; but it is well known that they do not go through Torres Straits.

505. You do not happen to know what they would charge supposing you chose to go through Torres Straits?—That would be going out of the way.

506. You never have had occasion to send ships from Adelaide to India?—I have not; but I had to make inquiry about the insurance from Adelaide to China, and I was told that if the vessel went through Torres Straits it would be five per cent.

507. Mr. *Wilson.*] When you spoke of passengers going to Australia, did you refer chiefly to emigrants going out with their families, or to people going out on business?—I referred to passengers chiefly.

508. But the present class of passengers that you chiefly contemplate are emigrants who are removing for a period of years?—Yes, those that go for mere business and to return immediately are very few.

509. Supposing there was steam communication, are you of opinion that the number would increase very materially of people who come here for short periods on business, to return again?—It would increase; I am not prepared to say very materially.

510. Are you aware what has been the effect of the introduction of steam communication with our other distant possessions, for instance our North American colonies and our Indian possessions, of the establishment of steam communi-

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cation upon the number of passengers and the amount of merchandise conveyed?—There is a decided tendency to increase, and so it would be with Australia.

511. Has there not been a very unexpected amount of increase?—I am not competent to answer that question as to how far it was expected; I should rather imagine that it was expected.

512. You are aware that the increase has been very large?—I am.

513. Do you think that the same motives would induce merchants and dealers in Australia to make frequent passages from England for the purpose of purchasing goods, and for the general conduct of their business, if there were greater facility for their so doing at a moderate price?—It would encourage them to do so; I do not think the number would be very large, but it would be much larger than it is now.

514. You spoke of the trade between Singapore and China, and Australia; are the goods sent generally of a character that would bear a good freight, such as the steamers would charge?—I think they would.

515. Not very bulky?—Sugar is bulky, but still the freights are always higher for those intercolonial voyages, and I apprehend that a steamer would not charge much more than the fast-sailing vessels do now.

516. Tea would bear a large freight?—It would.

517. Mr. *Stanley.*] You spoke of some difficulty and delay in the homeward passage by the Cape in the case of sailing ships?—Yes; the westerly winds usually prevailing, make the passage from Australia to the Cape much longer than *vice versâ*.

518. Do you know whether the course taken by steamers would be the same as that taken by sailing ships?—I am not competent to answer that.

519. Does the same difficulty occur at all times of the year, or only at particular seasons?—I believe not at all times of the year. I should imagine a steamer would take rather a different course, because I believe that sailing vessels have to go further to the north to get the south-easterly trades, and to avoid the westerly winds. If the steamer, therefore, took the most direct course, I apprehend it would bring her most directly in opposition to those westerly winds which prevail so much there.

520. What would be the articles imported into England from Australia which would be sufficiently valuable, and which would go in a sufficiently small compass, to pay the

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charges for freight in a steamer?—My opinion is, that there is nothing that comes from Australia that would bear the freight by a steamer.

521. *Chairman.*] Not even *viâ* the Cape?—Not even *viâ* the Cape.

522. Mr. *Wilson.*] That is, unless they were willing to take the same freight as the sailing vessels charge?—If they were willing to take the same freight the steamer could not bring much copper ore or tallow, because her coals would be dead weight enough for her, and wool is very bulky.

523. Mr. *Divett.*] Are you clearly of opinion, that in the present state of the Australian trade, it is essential that there should be a speedy and rapid communication between the Australian colonies and the ports of India?—It is.

524. Do you think that the trade will not get its proper development without having that communication opened?—I think certainly not. And there is another point which has not been mentioned: I anticipate that there would be many who would be glad to go from India to Australia for the benefit of their health, if they were certain of the means of getting there readily, and particularly of getting back readily.

525. You have understood that that would be the case?—I have understood so.

Adam Bogue, Esq., called in; and Examined.

A. Bogue, Esq.

526. *Chairman.*] HOW long have you been resident in Australia?—Upwards of ten years.

527. You have been largely connected in trade with that country?—Yes, I am at the present moment; I am a partner in a mercantile firm in Sydney, carrying on business with various parts of the world.

528. With what parts of the Australian colonies are you most acquainted?—With New South Wales, Victoria, and Van Diemen's Land; I have resided in those three colonies at different periods; and I have also visited South Australia and Swan River.

529. Are there any other countries in that part of the world with which you have commercial transactions?—I have had large commercial transactions with China and Manilla, and I have circumnavigated New Holland; I have visited China three times, once by the Torres Straits route; I have also visited some of the islands of the Archipelago, Singapore, and some parts of India.

530. Have you been by the Cape of Good Hope?—Yes, I have

I have doubled the Cape of Good Hope seven times, and Cape Horn once. *A. Bogue, Esq.* 15 April 1851.

531. In fact, you have been over most parts of the world?—Yes; I have also visited the United States, and Canada, and Rio Janeiro, and some other parts of the world.

532. Have you considered the question of steam communication with Australia?—Yes, I have given some attention to it.

533. To what point in Australia do you think it most important that that communication should be directed?—I consider that some point ought to be fixed to which steam communication should be directed, and that that point ought to be in the oldest and most important colony of the group, which is New South Wales, of which Sydney is the capital, and which is also the seat of the central government and residence of the Governor-general.

534. Are you able to speak to the exports and imports of New South Wales?—I am.

535. Can you state them for the last six years?—I will put in a Table which exhibits them.

536. Sir *J. W. Hogg.*] Whence have you got those figures?—They are taken from official returns, published in the "Sydney Shipping Gazette" on the 24th of August 1850. The Committee will observe that these are the total imports and exports from New South Wales. They also show the exports and imports to and from Great Britain for the same year; and also the per centage of increase per annum, and the consumption at per head of the population. This paper I will deliver in.

[*The same was delivered in, and is as follows:*]

IMPORTS AND EXPORTS.

The value of the total Imports and Exports in each of the last six years, using round numbers, was as under:—

	IMPORTS.	EXPORTS.
	£.	£.
1844	931,300	1,128,100
1845	1,233,900	1,556,000
1846	1,600,500	1,481,500
1847	1,982,000	1,870,000
1848	1,556,500	1,830,400
1849	1,793,400	1,891,300

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The imports of last year exceeded those of the previous year by 236,900 *l.*, or more than 15 per cent.; while the exports show an increase in the same period of 60,900 *l.*, or about 3 ¼ per cent.

In the years 1846 and 1847 the imports exceeded the exports; in the other four, the exports exceeded the imports.

The aggregate imports of the first three of these years were 3,795,700 *l.*; of the last three, 5,331,900 *l.*; being an increase of 1,536,200 *l.*, or more than 40 per cent.

The aggregate exports of the first three years were 4,165,600 *l.*; of the last three, 5,591,700 *l.*; being an increase of 1,426,100 *l.*, or more than 34 per cent.

The most satisfactory way of viewing our imports and exports is, however, to look at their amounts relatively to the number of souls composing the population. Their annual average per head was about as follows:

	IMPORTS PER HEAD.	EXPORTS PER HEAD.
	£. s. d.	£. s. d.
1844–46, per annum - -	6 18 -	7 11 -
1847–49, per annum - -	7 19 -	8 6 -

It thus appears that, during the last three years, our annual exports averaged 15 *s.* per head, and our imports 1 *l.* 1 *s.* per head more than during the previous three. And as the latter period was not marked by a spirit of commercial excitement or speculation, these advances must be taken as a fair index to the growing wealth and comfort of our community.

Our trade with Great Britain was as follows:

	IMPORTS FROM.	EXPORTS TO.
	£.	£.
1844 - - -	643,400	854,900
1845 - - -	777,100	1,254,900
1846 - - -	1,119,300	1,130,200
1847 - - -	1,347,200	1,503,100
1848 - - -	1,084,100	1,483,200
1849 - - -	1,371,200	1,572,600

Our imports from Great Britain last year exceeded those of the previous year by 287,000 *l.*, or more than 26 per cent.; while our exports thither in the same period show an increase of 89,400 *l.*, or more than 6 per cent.

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The annual averages of our trade with Great Britain, per head of the population, were about as follows:

	IMPORTS PER HEAD.	EXPORTS PER HEAD.
	£. s. d.	£. s. d.
1844–46, per annum - -	4 12 -	5 17 -
1847–49, per annum - -	5 13 -	6 16 -

We have here an increase in three years of 19*s.* per head in the exports to Great Britain, and of 1*l.* 1*s.* per head in the imports from that country.

We have now to look at the tables in which the imports and exports are classified with regard to the countries of which they are respectively the produce or manufacture.

	£.	£.
IMPORTS:		
Articles, the produce or manufacture of the United Kingdom - - - - -	1,207,800	
Less re-exported - - - - - -	108,900	
Retained for Home Consumption -		1,098,900
Articles, the produce or manufacture of other British dominions - - -	149,100	
Less re-exported - - - - -	18,600	
Retained for Home Consumption -		130,500
Articles, the produce or manufacture of foreign states - - - - -	436,500	
Less re-exported - - - - -	62,700	
Retained for Home Consumption -		373,800
Total Imports retained for Home Consumption - £.		1,603,200
EXPORTS:		
Articles, the produce or manufacture of New South Wales - - - - - - - - - -		1,701,100
Net Excess of Exports over Imports - - - £.		97,900

The value of articles, the produce or manufacture of New South Wales, exported in the three years, 1844–46 was 3,335,200 *l.*; the value of those articles exported in the last three years was 4,971,600 *l.*, being an increase of 1,636,400 *l.* or more than 39 per cent."

537. Have you made any comparison of the imports and exports from New South Wales, with those of the other colo-

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nies of the group?—Yes; I estimate the total exports and imports of the Australian group for the year 1851 to be in round numbers 6,000,000 *l.*, and I estimate that the exports and imports of New South Wales and Victoria will amount to two-thirds of that sum.

538. You have heard what the previous witness has said with reference to the staple exports from Australia to the United Kingdom, namely, that wool, tallow, hides, and copper were the chief staple exports; does that agree with your experience?—Yes, I think that is generally correct.

539. Do you know from official documents the number of ships required to carry the produce?—In the year 1849 there were from Sydney alone 44 ships loaded for Great Britain, and the quantity of wool taken home in those ships was 52,095 bales, 16,236 casks of tallow, and 72,942 hides; that was for the season of 1849–50.

540. What portion of that amount was exported to British possessions?—The whole of this was exported to Great Britain.

541. You have written a pamphlet upon the question of steam communication with Australia?—I have.

542. Which route did you recommend in that pamphlet?—I recommended, as far as I recollect, the Torres Straits route.

543. Are you still of the same opinion?—No, I have seen reason to modify my views.

544. Will you state the reason for that alteration of your views?—At the time I wrote that pamphlet, in 1848, there were no distinct and tangible propositions to connect Sydney with this country by steam, either by the Cape or by Panama. Indeed, a Sub-Committee of the House of Commons had reported in 1846, that it would take 90 days to reach Sydney by Panama. That Committee decided on the route by Torres Straits as the shortest and best; and there was this advantage attending the consideration of this route, that there was a powerful and wealthy company ready and willing, I believe, to carry it out without delay. It was the knowledge of this fact, perhaps, more than the consideration of the merits of the other schemes, which were at the time merely mooted, which influenced the Legislative Council of New South Wales in their decision in favour of the line by Torres Straits. There was then but one distinct practicable proposition; that was the offer made by the Peninsular and Oriental Company, to connect England with Australia by the Torres Straits route. Since then the discovery of the gold mines in California,

fornia, and the rising importance of that country, has attracted the general attention of the people of Australia to that quarter, and in the direction of the Pacific. At the same time a proposition has been made by the Pacific Steam Navigation Company to run a line of steamers between Panama and Sydney, touching at Taheite and New Zealand, at an average speed of 8½ knots an hour, in conjunction with the Royal Mail Steam Packet Company, offering to complete the entire passage from Southampton to Sydney in 61 days out, and 63 days home, including stoppages. Their scale of fares seems to me to be very moderate, namely, about 105*l.* for a cabin passage; and they would also be able to take steerage or intermediate passengers at about 45*l.* to 50*l.*

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545. Do they state that?—They do: the manager has stated to me this fact. This proposition appears to me much more advantageous in every respect to the Australian colonies than the one made by the Peninsular and Oriental Steam Packet Company to connect this country with Sydney by Torres Straits. I am inclined to think, that not only the people of New Zealand, New South Wales, and Van Diemen's Land, but even those of Victoria will welcome this as the best offer which has been made upon the subject. I consider that this question has not been discussed in the colonies with regard to the merits of the different routes, more especially out of doors, though it has been discussed to a considerable extent in some of the Legislatures. I think there is the strongest feeling in the colonies that a steam communication ought to be established, but I do not think they have sufficiently discussed the merits of the respective routes to enable them to fix upon any one route in particular. I believe they would welcome any one of the three routes. I believe that this Panama route has never been in question; its practicability has never been fairly brought before the public, and I am sure this proposition will meet with the general approbation of the colonies.

546. Mr. *Wilson.*] How long has it been before the public? —The question of connecting Sydney with Great Britain by steam in that direction has been merely mooted; but there never has been any proposition made until within the last few weeks or months, when the Pacific Steam Navigation Company put in a tender.

547. Has it been discussed at all at Sydney?—Not that route.

548. Are you able to say whether the view of the people of Sydney with regard to the Panama route corresponds with yours?—

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yours?—No; I have no correspondence upon that subject: but I have lately received letters, informing me that steamers are very much wanted out there for the coasting trade, and for the purposes of intercolonial communication.

549. *Chairman.*] Do you consider that the Panama line would ever be the line adopted for the carriage of merchandise?—I believe that it might, after the railway is opened, to a very great extent, be the means of conveying merchandise.

550. What kind of merchandise do you believe would pass by that route?—I should say valuable manufactures in general, which were wanted very much in the colonies; if that line were opened, merchants would be very glad to pay a little extra freight to meet the demands of the colonies, in the event of any particular article being very scarce.

551. Do you know of any fresh trade that has lately opened between North America and the Australian colonies?—Yes; I believe there has been a considerable trade with California; the year 1849 was the first year of that trade; I have a printed list, which was sent home from Sydney, of the goods exported from Sydney to California, from the 5th of April 1849 to the 5th of April 1850; this was the first year of the establishment of the trade, and it gives the various items amounting, from Sydney alone, to 57,840 *l.*; the greater portion of this, namely, 31,339 *l.* worth of this merchandise, was colonial produce.

552. Exported to where?—To San Francisco; I will give in this account of the exports of that year from Sydney to California. (*The same was delivered in.*)

553. Were those goods exported *viâ* the isthmus?—They were exported in ships from Sydney to California direct.

554. Is that an official document?—I believe it is as good as an official document; it was published by one of the newspapers in Sydney from the custom-house returns; I have also the "Sydney Shipping Gazette" of the 10th of September 1850, giving a list of ships expected from San Francisco, 24 in number; there were also on the 12th of October 1850 loading at the port of Newcastle, New South Wales, with coal for San Francisco, 22 ships; 16 of which were American, and six English and colonial; and I believe those ships were from 400 to 500 tons each.

555. Have you any reason to think that that is a temporary trade?—I have no reason to suppose so; I believe it will be a permanent trade.

556. Mr. *Wilson.*] Are there any natural products of Australia

tralia which you think will be required in California, and will form a permanent trade?—Coals, for one thing, will always be required, and we have been supplying them to a considerable extent with provisions, particularly flour, and with timber; but I do not suppose that the timber trade will be permanent, because America has so much timber.

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557. Do you think the flour trade is likely to be permanent?—I think it will continue for many years to come.

558. Do you think you can supply them from New South Wales on better terms than they can be supplied from the United States?—I should say that we can at least as cheap; we can supply flour to any country in the world as cheap as the United States, and of as good quality.

559. Do not your harvests vary very much, and your prices fluctuate from year to year?—No; the prices of wheat the last five or six years I do not think have ranged more than from 3*s.*, 3*s.* 6*d.* to 4*s.* 6*d.* per bushel.

560. They are more steady than they used to be?—Very steady indeed; I do not think they fluctuate more than 1*s.* a bushel in any given year.

561. With regard to the coal trade, do you think that you will be permanently able to furnish coal from New South Wales, as cheap as it can be furnished from Vancouver's Island, considering the difference in the length of the voyage?—Yes, I should say so; but perhaps I am not competent to speak upon that subject, because I am not aware of the nature of the mines in Vancouver's Island. Then besides that, in Australia, the markets are always subject to a glut in many articles of British manufactures, and San Francisco will open a very great market for those surplus articles of British manufacture which may be sent out to the Australian colonies. In fact, a great portion of the California trade has been in those articles which have been in demand in California, and have been sent from the Australian colonies.

562. Do you not rather attribute that to the fact that they were able to run to the market quicker than those supplies could be got direct from home, and that they were thereby enabled to take advantage of an artificial and temporary demand, which will rather be supplied permanently direct from England than by so circuitous a route as that of New South Wales?—No, I think it is just as probable that San Francisco may take from Australia many of those surplus articles for years to come, as that she should be entirely supplied by the circuitous route of Cape Horn.

563. If you contemplate the possibility of goods traffic across

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across the Isthmus of Panama to New South Wales, would not a goods traffic be equally capable, or even more capable of being carried from hence to San Francisco?—Yes, I should say so.

564. But you would not exclude altogether the chance of New South Wales being a source of supply of manufactured goods made in Great Britain, to San Francisco?—I think not; because we find in all parts of the world markets are liable to be overdone with certain articles, more especially limited markets like those of the Australian colonies, where supplies are often sent out of particular articles to a sufficient extent to last for years; and, in fact, it would very often suit the purpose of the merchant to reship them to England, in order to get rid of an accidental glut, and California offers a very good outlet for such a surplus.

565. Mr. *Divett.*] The Newcastle coal in New South Wales is a very good steam coal, is not it?—It is not quite so good as the English. Captain Hoseason, of the "Inflexible" steam frigate, reported that the proportion of Newcastle coal to the English coal was as 33 to 50, as regards its qualification for producing steam, as far as I recollect; that is to say, that 33 tons of English coal go as far as 50 tons of Newcastle.

566. It is inferior as compared with the best English steam coal?—It is.

567. But does that apply to all the pits of Newcastle?—I believe it would apply generally to the coal mines at present worked.

568. Is there any great variety of coal in New South Wales?—I believe there are three mines opened, but the Australian Agricultural Company's mine has been the one that has hitherto furnished the chief supplies.

569. They have not yet ascertained what other coal there is there?—There is abundance of coal.

570. But not as to its quality?—No, that has not been ascertained.

571. Are you aware that the Vancouver's Island coal is lignite?—No; I do not know much about the Vancouver's Island coal.

572. You stated that the price of wheat, which was formerly very variable in Sydney, has latterly been more steady; to what do you attribute that?—I should state that it is now steadier than it is in England; I attribute that to the productive powers of the country as regards grain.

573. To the productive powers of the Victoria colony?—Of the colonies generally; because when we have a failure or a light

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a light crop in one colony, we generally have an abundant crop in another; thus the prices are equalized.

574. That is in consequence of the great extension of the cultivation of wheat in the Australian colonies?—It is.

575. Is the cultivation of wheat extending very largely in Victoria, or in New South Wales?—It is extending a good deal in Victoria, and also in South Australia.

576. Not so much in New South Wales?—I should say not quite to the same extent; in fact, we import largely in New South Wales from those countries.

577. Is it not extending largely in Van Diemen's Land?—I do not think it has extended much within the last six or seven years.

578. *Chairman.*] Are you interested as a merchant in the establishment of the line of communication *viâ* Singapore and Torres Straits?—Yes, I am deeply interested in it.

579. What do you consider to be the advantages and disadvantages of that line?—I consider that the advantages as regards India and Australia would be very great, but that they would not be so great as regards England and Australia, as they would be by the adoption of the route by Panama.

580. What induces you to prefer the route by Panama?—I consider that the three routes are all good, and that their adoption would ultimately be attended with perhaps equal advantages, but we must look at present to the expediency of establishing a route, and perhaps it might be shown that one route could be established to a greater immediate advantage than another. I consider that there are three objects sought to be combined by the establishment of this communication; the conveyance of mails, of passengers, and merchandise. The two first are the most important; and if we cannot obtain them all by any one route, I think that route which combines the requisites for obtaining the two chief objects in the greatest perfection as to rapidity, economy, and comfort of transit, should be encouraged by Government. The Panama route seems to have the requisites for those two advantages of postal communication and passenger traffic to a much greater extent than either of the other two.

581. Are you acquainted with the nature and amount of the value of the imports from Australia to China, Manilla, and Java?—I will speak to China in the first place. I have the exports from China to the Australian colonies during the years 1848, 1849, and 1850. In 1848, the exports of tea were 3,697,463 lbs., valued at 123,248*l.* In 1849, the exports of tea from China to the Australian colonies were 3,120,363 lbs.,

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3,120,363 lbs., valued at 104,021 *l.* In 1850, the exports of tea to Australia were 3,411,900 lbs., valued at 113,730 *l.*

582. Mr. *Wilson.*] Was that the value in Australia, or in China?—It is the Australian value. I have taken it at a very moderate value, 8*d.* per lb. The average for the three years is 3,409,999 lbs.; the value, 113,666 *l.* The value of other merchandise exported from China to Australia might amount to about 20,000 *l.* The total of general imports from China, therefore, for 1850, is 133,666 *l.* I will now state the extent of the trade with Manilla, which is also very important. The exports from Manilla to the Australian colonies during the year 1850, were 8,948 tons of sugar, value 152,116 *l.*; coffee, 104 tons, value 6,240 *l.*; cordage, 250 tons, value 11,500 *l.*; cigars, 12,045 boxes, containing 1,000 cigars each, value 24,090 *l.*; hats, 121,000, valued at 12,100 *l.*: that is the extent of the trade from Manilla. The total value is 195,156 *l.*

583. *Chairman.*] What is the Java trade?—I have not got any document to show the amount of that, but there is a considerable trade from Java in sugar to Australia, and there is also a considerable export trade to Java from the colonies in the shape of flour, cheese, butter, coals, and other colonial products.

584. Can you speak to the trade with Calcutta, or any of the Indian presidencies?—Yes; I have the trade with Calcutta for the years 1848, 1849 and 1850; for the year 1850, the exports from Australia to Calcutta amounted to 56,240 *l.*; the imports for the same year were 13,773 *l.* sterling.

585. Mr. *Wilson.*] What do the exports consist of chiefly?—The chief items are copper, flour, coals, confectionery, haberdashery, hides and skins, iron, provisions, sandal wood and wine; and the imports from Calcutta into Australia were sugar, silk-piece goods, Cashmere shawls, indigo, saltpetre, rice, canvas, castor oil, gunnys, gunny cloth, hides and skins, hemp, twine, lacdye, shellac, rum, cigars, and other articles.

586. *Chairman.*] You have heard what the former witness has said as to the charge of passage-money now paid by the Suez route to Singapore; do you agree with him in thinking that that amount of charge would be a bar to any considerable number of passengers going by that route?—I should say it would be a considerable bar.

587. Mr. *Willcox.*] You spoke just now of the rate of passage-money proposed to be charged by the Panama route; supposing parties found it desirable, could not they increase that charge?—That would be for their consideration.

588. Would

588. Would they not have the power to do that?—Decidedly they would; but they would not find it their interest to do so. They would of course have the power, unless the Government bound them down that they should not charge more than a certain sum.

589. Might it not turn out that those terms, though talked of, might eventually prove delusive?—That would apply to any route that is proposed.

590. You are not speaking of a rate that is established, but you are speaking of what the parties propose to establish?—I am speaking with reference to the proposed schemes which are now being discussed. I wish to give impartial evidence; I am not in favour of any one of the routes in particular, over and above the superiority of merits it may possess.

591. Would the parties be bound at all to those rates to which you have alluded?—I should say, from what I know of the matter, that it would pay them very well to do it at that rate.

592. Mr. *Mangles.*] Is it the habit of honourable parties, who have given out that they will charge such a rate, to raise that rate afterwards?—No, I do not think it is the custom, and it would not be their interest to do so.

593. We have it in evidence that the charge by Singapore would be 182*l.*; if the parties were unscrupulous, might they not raise that rate just as easily as the other parties could raise the other rate?—Decidedly; the same objection would apply to any route.

594. *Chairman.*] I gather from your evidence that you are in favour of the Panama line?—Yes.

595. Have you any connexion with any of these projects which are before the public?—I have no connexion at all.

596. And you consider that the Panama line for the convenience of the Australian colonies, both for postal communication and for mercantile transactions, is the best route that is now before the public?—I consider that viewing the advantages and disadvantages of the three proposed routes, the balance of advantages over disadvantages is decidedly in favour of the route by Panama, and for these reasons: it is the shortest route to New Zealand, according to Captain Fitzroy, by about 2,000 miles. The Pacific Company propose to communicate with Sydney in 61 to 63 days, which is the shortest as regards time of any of the proposals. Then it combines rapid postal communication with economy and comfort for general passenger traffic. The smoothness of the

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the seas to be traversed, the mildness of the weather and salubrity of the climate throughout the entire line, the notorious general safety, the facility and freedom from danger of the navigation of the Pacific, would hold out the greatest inducements to passengers with their families. Another advantage is the connexion of the rising and important settlements of New Zealand with the mother country; another is the connexion of Sydney with New Zealand, and the connexion of Sydney with California in about 54 days, instead of from 90 to 110 days by the present route of sailing vessels. Also the connexion of Australia with the west coast of South America, with the West Indies, the United States, and Canada. There is also the political advantage of reviving the fading influence of England in the Pacific. It affords the means of a rapid, economical, and pleasant passage home and out again to the colonists of New South Wales, Victoria, Adelaide, Van Diemen's Land, and New Zealand. From a great portion of the main trunk line being fed by the passenger and merchandise traffic of so many countries, it is likely to become a very lucrative adventure to the companies who propose to carry it out. Consequently the public would look for and would obtain a communication throughout the entire line perfect as regards rapidity, economy and general efficiency. The Cape route has not these great advantages.

597. *Chairman.*] Will you state, shortly, the grounds upon which you object to the Cape route?—One of the disadvantages of the Cape route is the length of time that it would take to reach Australia by this route. It would not be in a much shorter time than that in which the voyage is frequently performed by sailing vessels. The "Bosphorus" steamer was 39 days out to the Cape, and 37 days home; and if we take that passage as the basis of our calculation, we shall find that a steamer by that line, allowing the distance to be 13,880 miles, would take 72 days' steaming, at the rate of eight knots an hour; and allowing 10 days for stoppages at Madeira, Sierra Leone, St. Vincent, the Cape of Good Hope, Swan River, Adelaide, and Port Phillip, she would be 82 days in reaching Sydney, and I am inclined to think that she would be five or six days longer in going home, on account of the prevailing winds, which blow strongly from the westward, and would be directly against her.

598. Lord *Naas.*] You said that you had changed your opinion with reference to the Panama line?—I have changed my views with reference to the immediate establishment of steam communication. Comparing the Panama route with the

the route by India, I consider that it would be a great advantage to Australia generally, not to one particular colony, that the route by Panama should be carried out.

599. You published a pamphlet upon this subject in 1848?—I did.

600. You say in this pamphlet, which is a letter to Lord Grey, "I think enough has been said of this line (that is, the Panama line) to satisfy your Lordship that it is not one that the Government should encourage." Now, you were understood to say that your only reason for your change of opinion was, that at the time when that pamphlet was written there was only one good company in the field, as regards one of those three lines?—That was one of the reasons which I stated.

601-2. Was that your only reason?—No, I stated some other reasons; I stated that a sub-committee of "The Australian Steam Committee," or perhaps of "The Association for the promotion of Steam to Australia," the report of which was drawn up by the Hon. Francis Scott and Sir George Larpent, on the 19th of October 1846, and presented to Earl Grey. A copy of the said report was forwarded by Mr. Scott to the Speaker of the Legislative Council of New South Wales, 1st November 1846. *Vide* Legislative Council papers of New South Wales, year 1847, vol. 1, p. 299 *et postea*. There is another reason which I stated: the discovery of the gold mines in California, and the increased attention which had been lately directed to the Pacific in general.

603. You say that you have given attention to this project of the Pacific Steam Navigation Company for carrying mails from England to Australia by Panama; can you inform the Committee of the exact route that that company intend to take?—They propose to leave Panama, touching at Taheiti, New Zealand, and making Sydney the terminus.

604. Do you believe that that is the best line from Panama to Sydney?—It appears to me to be the most direct route; it is almost a straight line.

605. What is the distance from Panama to Taheiti?—I should say it was 4,488 miles.

606. That would be a dead run?—A dead run.

607. Then is it proposed to coal at Taheiti and at New Zealand?—If they required coal at Taheiti, which is not very likely, because they would have the south-east trade wind in their favour all the way from Panama. But no doubt they could provide a coal depôt at Taheiti.

608. Mr. *Divett*.] Alluding now to the calculation made

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with reference to paddle-wheel steamers, or with reference to screw steamers?—The proposition is to have screw steamers from Panama to Sydney.

609. Lord *Naas.*] Do you know what the probable expense of coal would be at Taheiti?—I have not made the calculation, but I should say that as coals are supplied at the pit's mouth, at Newcastle, for 6*s.* 6*d.* per ton, you must add to that the freight to Taheiti, to get at the price. I should say that they might be laid down at Taheiti for something like 2*l.* a ton, taking one year with another. At present they would be much dearer, because there is a great demand for coals at Newcastle, to supply the wants of California and the west coast of America.

610. Then in case of this line being established, you propose to get your coals from New South Wales?—That would be a consideration for the company, whether they would find it cheaper to do so. I should say that they would find it cheaper to supply their depôts in that direction with coal from Australia.

611. If coals were supplied to Taheiti or to Panama from Australia, they would of course be carried there as freight, not as they are in England, as ballast?—Decidedly so, as freight. No ship would take coals to Taheiti unless she got paid for it.

612. So that the same plan would not be adopted in carrying coals from New South Wales, which is at present from England, of vessels carrying out coals mostly in ballast, in the hope of obtaining a valuable return freight?—Not exactly in ballast, but they take out coals at a very moderate freight. Very often the owner of the ship or his agent cannot get freight for his ship, and he fills her up with coal on what is called the ship's account.

613. You said that you thought that the advantages of the Panama line for postal and passenger purposes were greater than those of the line by the Cape?—I think decidedly for passengers of moderate means, and of the better classes.

614. Do not you think that the transhipment at the Isthmus of Panama would be very much against the carriage of passengers of the poorer sort by that line?—I think the general pleasantness of the voyage would counterbalance the objection of transhipment at Panama.

615. Would not the transhipment at Panama add very much to the expense?—Not if you can get across the isthmus in six hours, which they propose to do by railway.

616. You

616. You think it would not add materially to the expense?—Very immaterially; I think that any company would be very glad to take passengers across, including that in the rate of passage-money, as the Peninsular and Oriental Company do through Egypt.

617. Why do you think that the postal advantages of this line are superior to those of the Indian one?—The greater rapidity of the transit; 70 days is the lowest estimate for the Torres Straits route, and 61 days is proposed by this company.

618. On this line the point of departure at Panama, and the point of coaling at Taheiti, would be in the dominions of foreign states?—Yes, if you call Taheiti a foreign state.

619. It belongs to the French, does it not?—It is difficult to know to whom it belongs.

620. But still it is an objection that the point of departure and a point where you touch for provisions or coal should be in the possession of other states?—I do not consider it any great objection, not sufficient to counterbalance the advantages I have already stated.

621. Mr. *Divett.*] In stating your preference for the Panama route, have you any idea that any considerable quantity of goods would be taken from England by steamer to the isthmus; taken across the isthmus and put on board a steamer to go to Sydney on the other side?—I do not think there would be any immediate merchandise traffic in that direction.

622. Do you see your way to a prospective traffic in that way?—Yes; I should say decidedly.

623. Do you think it possible that a line of steamers taking that course could compete for traffic with sailing ships or screw steamers going round the Cape?—There is an immense quantity of goods conveyed to California from the United States across the isthmus at present; and if it pays the Americans to send their merchandize in that quarter, surely it would suit the Australians to receive it in that way to a certain extent.

624. Is it not the fact that there is no other way in which the Americans can send those goods quickly; that they must either send them that way or send them round Cape Horn?—The interest of money and reaching a ready market are the great objects to merchants; freight in many cases is a mere fractional part of the expense.

625. Have you verified at all the calculation upon which the proposal is founded, which is said to be made, to take

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passengers to Sydney by that route in 61 days?—I have made a calculation, and I find that 11 knots an hour are allowed by the Royal Mail Steam Packet Company to Chagres from Southampton, which is quite within bounds.

626. How many days does that make?—That makes 18 days.

627. How many knots an hour do you allow from Panama to Sydney?—Eight and a half; which is very moderate, indeed.

628. Does that bring it to 61 days?—It brings the time to 61 days, allowing four days for crossing the isthmus, which will eventually be done in six hours; and allowing also, I think, one day at Taheiti, one day at New Zealand, and another at the Gallipagos; but there is no necessity for calling at the last-mentioned place; it would not alter the chief features of the plan to omit that.

629. Do you consider steam communication between Sydney and India to be of no great importance, or do you propose, assuming that this Panama route were established, to keep up also a communication between the Australian colonies and India?—There is plenty of scope for another line in that direction.

630. You think, assuming the Panama route to be established, that an additional line between the Australian colonies and India would be required?—Decidedly. I think it would be for the interests of the Peninsular Company to carry out that line, independently of any support from the Government. I think it would pay them to do so; the traffic between India and Australia is very great.

631. You think it would pay the company to carry out that route without any payment from the Government for the mail packets?—I do not say that it would answer their purpose immediately, but I think that eventually it must be done; I do not suppose they would be inclined to do so at present.

632. In considering the subject of steam communication, when you formed an opinion in favour of the Torres Straits route, did you at all consider the wants of the other Australian colonies besides New South Wales?—I did; my views were formed with reference to the Australian group generally, not with reference to any particular colony.

633. How did you propose to communicate with Adelaide by the Torres Straits route?—By a branch line from Sydney.

634. Therefore

634. Therefore you would go all round to go to Adelaide?—I do not consider that it would be going round much.

635. Have you considered the effect of such a route as to time?—There might be a difference of two or three days; but still, if Sydney is the point to which steam is to be directed, you must keep that in view.

636. Did you at all go into the calculation as to the time that it would take for a steamer from Singapore to get to Sydney, going by the southern route and going by Torres Straits?—I made a calculation, I think, with regard to those routes; I think, as regards time, I set them upon an average as nearly equal.

637. That is to say, it would not take more time to go to Sydney by the southern route, touching at all those colonies, than it would to go by Torres Straits to Sydney, touching at none of them?—I do not think it would, to any extent.

638. Then in forming the opinion you have expressed, do you mean to say that it is better for the Australian colonies to give them a line of communication that will serve one of the colonies only, when there is another line of communication by which all can be equally served?—I do not consider that you can have a comprehensive plan of communication combined with rapidity; you must curtail the comprehensiveness, if you wish to reach a certain point with rapidity.

639. But, according to the opinion you expressed just now, there is a comprehensive plan which might be adopted, which would combine the same rapidity as you have by the incomprehensive plan. How do you account for choosing the less comprehensive plan under these circumstances?—I think the object is to reach Sydney in the shortest time.

640. Then you throw out of consideration the importance of communication with the other colonies; you look upon Sydney as the only point worth considering?—I consider that branches might be established from Sydney to the other colonies, which would answer the purpose equally well.

641. But you have stated that by the southern route you could accommodate all the colonies in the same time in which you could accommodate Sydney alone by the Torres Straits route, yet you prefer the route that would accommodate Sydney alone. Does not it come to this, that you do not at all consider the interests of the other colonies, and that you are merely looking at it as a Sydney question?—No, I am looking at it as a general question; but I think you have misunderstood my last answers. I spoke with reference to Adelaide as the point to be reached, not Sydney, as I was

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under the impression that the former question was put with reference to that place; that is, I am of opinion that it would take a steamer from Singapore as long to reach Adelaide by the southern or Cape Leeuwin route as by the Torres Straits route.

642. You stated that Sydney should be chiefly accommodated, because it is the oldest and most important colony; now it is certainly the oldest, but in speaking of it as the most important colony, do you include Port Phillip in your view of it?—No.

643. Do you know much of Port Phillip?—I do; I have lived there.

644. Is not the district of Victoria at present advancing much more rapidly than the district of which Sydney is the capital?—I should not say much more rapidly; I think they are both advancing at the same rate.

645. Is not Victoria practically at this moment advancing much more rapidly than the part of Australia of which Sydney is the capital?—I should say it was advancing at an equal rate.

646. Is not the colony of which Adelaide is the capital advancing much more rapidly than the portion of Australia of which Sydney is the capital?—I do not think so.

647. Have you examined the increase of population and trade in those colonies?—Yes; I have got the statistics here of Adelaide; the South Australian population, on the 1st of January 1850, was 52,904.

648. Mr. *Berkeley*.] You stated that you were not partial to any particular route?—I am not partial to any particular route, otherwise than from the superiority of its claims and merits; I am not partial to any particular colony.

649. From the answers you have given, I should come to the conclusion that you prefer the Panama route?—I do prefer it.

650. Then you are partial to the Panama route?—I consider it to be the best. I have no personal interest to serve; it is merely on account of its superiority that I prefer it.

651. You reside at Sydney?—Yes.

652. You are a merchant at Sydney?—I am.

653. Are you acquainted with the public opinion in Sydney?—Yes, I think I am.

654. Have these routes been very much discussed in Sydney?—Very little; the merits of the respective routes have not been discussed.

655. Which route should you say is the route to which public

public opinion is pointed in Sydney?—I do not think that public opinion has been expressed to any great extent on the merits of any one of the routes.

656. Have you ever heard it expressed as an opinion in Sydney, both publicly and privately, that the Singapore route is that which is most preferred there?—It was the only route proposed, and they were very glad to adopt it.

657. Do you mean to say that the other routes have not been discussed?—No distinct proposition was made to carry either of the other routes out.

658. Did you never hear the question publicly discussed?—Never, publicly.

659. Lord *Naas.*] It has been stated that the committee of the Legislative Council of Sydney last year recommended a vote of 6,000*l.* for the Singapore line, 3,000*l.* for the Cape line, and 2,000*l.* for any other line; do not you think that is pretty good evidence of the opinion of the colonists as to the line?—The Legislative Council did not propose to give anything towards the Cape line.

660. Mr. *Berkeley.*] Were you aware of the circumstance mentioned in the last question?—I was quite aware that the Legislative Council had voted 6,000*l.* a year for three years in aid of the line by Torres Straits.

661. Then how is that to be reconciled with your former answer, that you were not aware that any public opinion had been expressed at Sydney upon the question?—I was asked if I had heard the question discussed in public; I have never heard it discussed in public, but I was aware that the Legislative Council had discussed it; in fact, I gave evidence before the Legislative Council in 1848 on the subject.

662. Mr. *Scott.*] You wrote your book in 1848?—Yes.

663. When was the first meeting upon the subject in Sydney?—There never has been any public meeting upon the subject, to my knowledge.

664. How many committees of the Legislative Council have reported upon it?—The first report was in 1846.

665. When was the next?—In 1848.

666. When was the next?—In 1850; but besides these, resolutions were passed by the Legislative Council in 1844 for an address to Her Majesty, praying for steam communication, which address was forwarded to this country.

667. Was there evidence given before those committees?—Yes.

668. This book you wrote in 1848; Mr. Hayes's plan was then before the public?—Mr. Hayes's plan was mooted.

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669. You are aware that a plan has been proposed by Mr. Hayes, in a pamphlet published by him, to carry into effect a steam communication by the Cape, by means of a line of vessels to be impelled by screw machinery, with large tonnage and small steam power?—I did not consider that a tangible proposition on the part of Mr. Hayes; it was the mere project of a private individual; there was nothing practicable in it; the only tangible proposition which was made was the one by the Peninsular and Oriental Company, who stated distinctly what they could do, and were prepared to do. The Cape people or the Panama people have never made any distinct proposition, and I am inclined to believe that the Sydney people were influenced more by the circumstance of that being a distinct proposition, than by any merits of either of the other two routes.

670. Mr. *Currie*] In how many days do you propose to go from London to Sydney by the Panama route?—Sixty-three days out, and 61 days home.

671. You said that from Panama to Sydney you would have the advantage of the south-eastern trade winds?—A great portion of that distance.

672. And call if necessary at Taheiti?—Yes.

673. How would you propose to come back from Sydney to Panama?—I should propose running along the parallels between 30 and 40 degrees south latitude.

674. Where would you take in coal?—You would not require much coal; you might coal at New Zealand, and then run along the parallel of 40 degrees to the 130th meridian. You would then steer a northerly course towards Panama, carrying the south-east trade winds with you, or the westerly winds which prevail off the coast of South America.

675. Do you think that by touching at New Zealand you could go without coaling all the way to Panama?—I do.

676. What is the distance from New Zealand to Panama?—It is about 7,968 miles from Sydney to Panama, and you must deduct 1,200 miles from that.

677. *Chairman.*]. How have you arrived at those distances?—I have taken them from the statements of the hydrographers, Captain Philip Parker King, R. N., Captain Fitzroy, and others, who have calculated those distances.

678. Lord *Naas.*] Do you state it as your opinion that the Panama line is the shortest line from England to Sydney?—Yes.

679. Are you aware that from a chart which is before the Committee, it appears that the distance from Southampton to

to Sydney by Panama is 12,441 miles; from Southampton to Sydney by the Cape, 13,354 miles; and by Singapore and Torres Straits, 11,553 miles, making a difference of nearly 1,000 miles in favour of the Singapore and Torres Straits line?—I am aware that the two first-mentioned distances are about right, but I was not aware the last-mentioned distance was so short.

680. Mr. *Currie.*] Have you calculated the number of miles that it would take extra to go round in the way you proposed?—I have calculated the distances, calling at the various depôts. I have got it down here, from Southampton to Sydney *viâ* Panama, calling at Taheiti and New Zealand, 12,690 miles.

681. What would the return voyage be?—The return voyage would not be a great deal more.

682. Mr. *Berkeley.*] You stated that although you live in Sydney, you are not aware of the public opinion at Sydney upon this subject?—I have stated that I did not consider that the question had excited much interest out of doors.

683. And that you were not aware of the resolutions of the Legislative Council?—I am aware of those resolutions.

684. Were you not aware that they were published in all the local papers?—I was.

685. Consequently you must be well aware that public opinion was expressed upon the subject in Sydney?—I did not consider that any criterion of public opinion. It is to a certain extent, but to a very small extent, on some questions.

686. Did you not state that it was never discussed in Sydney?—I stated that it was never discussed out of doors.

687. What do you mean by out of doors?—Out of the Legislative Council.

688. Do you mean to say that the Legislative Council is of so little interest in Sydney that its affairs are not discussed out of doors in the colony?—Its affairs are certainly discussed, but not upon this particular question. What I mean to state is this, that steam communication with Australia has excited generally the greatest interest, but that the merits of the respective lines have not been discussed out of doors to any extent. The Legislative Council of New South Wales is not a fair representative of the public opinion of the colony, as the House of Commons is of the public opinion of this country; in this respect the colony has not the great advantage of representative institutions. The members of the

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the Legislative Council are not entirely elected, one-third of them being the mere nominees of the Colonial Office.

689. Therefore you are not aware what line is preferred in Sydney?—I believe that if this proposal which the Pacific Steam Company have made were placed before the people of New South Wales, it would be adopted without one dissentient voice, if the company were prepared to carry it out immediately.

690. Mr. *Stanley.*] You spoke of American goods going from the United States across the isthmus to California; do you state that from your own personal knowledge?—I state it from a paragraph in a letter that was put into my hands this morning, with reference to the traffic over the isthmus. This paragraph stated that there were six steamers per month between Panama and San Francisco; that the freight amounted to 100 dollars per ton, and that there was every probability of there being a large depôt for commerce formed in the Bay of Panama.

691. Are you certain that that merchandise did not consist almost entirely of the personal property of emigrants taken with them?—I am not in a position to state whether it was so or not.

692. Are you aware that there is considerable difficulty in loading and unloading goods in the Bay of Chagres?—I am not aware; I have never been there.

693. With reference to the line by the Cape, you stated that the two passages of the "Bosphorus" had been 37 and 39 days; are you aware that the "Bosphorus" is of very inferior size and power to the new steamers which the company are building?—I am not aware of that fact; I understood that she was a vessel of 400 tons, with about 200-horse power, one-horse power to two tons.

694. Mr. *Currie.*] Have you ever been at Panama or Chagres yourself?—No.

695. Then you cannot speak as to the salubrity of the place?—No, I cannot speak as to that; but I believe it is not inferior in that respect to Sierra Leone, one of the chief depôts on the Cape of Good Hope route. I beg to lay before the Committee a paper on the importation of the alpaca or Peruvian sheep into the Australian colonies from the west coast of South America, by Mr. Mort, and read last year by him before the Australian Society in Sydney. The society have approved of, and have given their support to the scheme, and it is also receiving the earnest attention of the public in New South Wales. (*The Paper was delivered in.*)

696. Mr.

696. Mr. *Mangles.*] When the Legislative Council gave their preference to the route by Singapore, was not that route the only one practically before the Council?—It was the only practical route that was before the Council.

697. Then their giving you a preference to that route was merely tantamount to saying that they desired steam communication?—The adoption of that route held out an immediate prospect of its being carried out, and that no doubt influenced them in coming to a decision on the question. It appeared to be so easy to connect merely a distance of about 4,500 miles between Singapore and Sydney, in comparison with the other lines, that that had a material influence with the Council in coming to a decision upon the question.

698. Was any tender, or offer, or any proposal from the Pacific Steam Navigation Company then before them?—No, there was no distinct tender, to my knowledge, on the part either of the Cape Company or the Pacific Company.

699. You were asked, supposing the Panama route were adopted, how you proposed to go back from Sydney to Panama; is there not between South America and the Australian colonies what is called "a soldier's wind," a fair wind both ways?—Not exactly a "soldier's wind," because, although beween Panama and Sydney, you would have in the south-east trade wind, a fair wind, the greater portion of the distance; still, on the return passage, the trade wind would not be directly in the teeth of the vessels, but at the same time, it would not be a fair wind; consequently, it would be better for them to take advantage of the westerly winds which blow between the parallels of 30 and 40 degrees south, until they reached the 130th meridian, when they could shape their course in a more northerly direction towards Panama.

700. You were asked whether you thought it possible that any considerable traffic could be carried on across the Isthmus of Panama; are you aware whether there is any considerable traffic across the Isthmus of Suez?—There is considerable traffic in passengers, but there is no traffic in merchandise, with the exception of specie. In the first place, the charge of 40 *l.* or 50 *l.* a ton would be a bar to it.

701. Did you ever see the correspondence which passed on the subject of that line between the Chancellor of the Exchequer and the Chairman of the East India Company?—I have glanced at it.

702. Are you aware that in that correspondence it was complained of as a grievance that the vessels of the Company running between Bombay and Suez could not carry merchandise?—

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dise?—It was; I believe that referred to the Company's men-of-war and the Government vessels.

703. Would that have been complained of as a grievance if merchandise was not carried across the isthmus: in other words, did not the circumstance of that being spoken of as a grievance arise from the transit of merchandise across the isthmus?—The grievance was merely nominal, when there was actually no merchandise carried across the isthmus.

704. Mr. *Divett.*] Are you at all aware of the present position and resources of the Pacific Steam Navigation Company, of which you have spoken as having made a proposition for the Panama route?—I am not aware of their resources; I know very little about them, but I give my evidence on the assumption that the Government would look to the means of the company for carrying out their proposition?—I have assumed that they are in a position to do what they have stated.

705. You do not know anything about the company?—I know nothing about them.

706. You have merely had the assertion made to you, that a certain company called the Pacific Steam Navigation Company has proposed to do that work?—I think what they propose to do is the subject of common report out of doors.

707. Who are the active representatives of this company in England?—I do not know; the only person I know connected with them, and with whom I have had an interview, is Mr. Just, who I believe is secretary to the company; but my information has not been derived from Mr. Just, I have made inquiries elsewhere.

708. Mr. *Mangles.*] You said that you thought that if the Panama line were established, the line to India by Singapore would also be necessary?—I think so; it would be very important.

709. But if the Singapore line were first established, would not the line to Panama be also necessary?—However necessary it might be, I question very much whether any company would undertake it without Government aid.

710. You think it is much more likely, that if the Panama line were established, the Singapore line would afterwards be established, than that if the Singapore line were established, the Panama line would afterwards be established?—Decidedly.

711. Would the not having a line to Panama be a great mischief to Australia?—I think the Americans would be very likely to carry it out, if we did not. They are extending their steam

steam communication all over the Pacific. They are to have a line very soon to Canton; and I have heard it stated, that the people of New South Wales have made a proposition to the people of the United States to carry out a line in that direction. I have heard that as a report.

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712. Do you know anything of the state of American navigation, by means of the American government or otherwise, in the Pacific?—They have steamers all along the coast. I have stated that they have six steamers monthly from Panama to San Francisco, and they propose to carry out a line to Hong Kong.

713. Are you aware that the American government has given a new contract to Mr. Aspinwall for a line from Panama to California?—No, I am not aware of it.

714. Do you suppose, from what you know of the state of feeling of the legislature of New South Wales, that if they were satisfied that the Panama line was the best, or if that line were fixed upon by the Government of this country, they would give, or that they would refuse to give, any pecuniary aid to it?—I think that if such a proposition as has been made by the Pacific Steam Navigation Company were made to the legislature of New South Wales, they would be inclined to give them that support which they offered to the Indian route; which was 6,000 *l.* a year for three years.

715. Mr. *Wilson.*] You stated, in reference to the Panama route, that one of the great advantages was the intermediate communication which it would afford to California and other places in the route; now looking at the two routes, the one by Panama, and the other by Singapore, upon which of those two routes would the intermediate postal communication be the most important as regards the colonies themselves?—As regards the British possessions in India and Australia, of course the Indian route would be the most advantageous.

716. Confining yourself altogether to the interests of the South Australian colonies, which of the two routes would present to them the greatest commercial advantages, with reference to intermediate stations, that by Panama or that by Singapore?—I should think they are about equal.

717. Have not you told the Committee that the trade between China and Singapore, and those intermediate places in the Eastern Seas, and the South Australian colonies, amounted to many hundred thousand pounds in a year?—Yes.

718. Have you not also put in a paper which shows that the

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the amount of traffic in the other direction is only 57,000 *l.* a year?—Yes.

719. Then which of those two routes, in a commercial point of view, is the most important?—Of course the Indian route, decidedly, is the most important with respect to that branch of Australian commerce.

720. Supposing you were only to have one route, and supposing that you were now considering the best route for a single route, which of the two routes would you consider to be the most important?—The Panama route.

Mr. *John Lambert*, called in; and Examined.

Mr. *J. Lambert.*

721. *Chairman.*] ARE you engaged in trade with Australia?—I am.

722. With what part of the colonies?—More particularly with Sydney.

723. You are aware of the object of this inquiry?—I am.

724. Will you state your views to the Committee, as regards steam communication with Australia?—I think it would be a waste of words to prove the desirableness of steam communication with the colonies, the subject has been before the public so many years. I think the only question to be decided is, the most proper route by which the communication should be conveyed.

725. You are aware of the three routes now under consideration?—Yes.

726. Which of them do you think is most applicable to the wants of the colony?—For the general requirements of the colony, I prefer the route by the Cape.

727. Will you state your reasons?—It combines more advantages than any other; the greater part of the trade of New South Wales is with the mother country; I think that route would be nearly as rapid as any other, and it would facilitate the conveyance of goods and passengers without any change of vessels, which no other route can accomplish.

728. You think that transhipment would be a bar to passenger communication to any extent?—It would always make it more expensive.

729. You consider that the Cape line is the most economical line that could be established?—I do.

730. With respect to trade generally, and the carriage of merchandise, do you consider that either the Panama route, or the route *viâ* the Isthmus of Suez, would be applicable to the carriage of merchandise?—I should think it almost impossible

possible to carry merchandise to New South Wales by either of those routes, the expenses would be so very great.

731. Do you likewise consider that the transhipment would be a bar to trade?—A very great bar.

732. What class of passengers do you think would be likely to be conveyed by the Suez line?—Only the wealthiest class. I think outward you would get very few passengers by the Suez line, from its great expense and difficulty; there would be no families; no gentleman of moderate means would think of taking his family that way, and there are many who go out with their families.

733. On the homeward voyage, would there be many passengers?—On the homeward line, a merchant who had made his fortune might come home that way for his pleasure. I think that, homeward, there would be a greater number of passengers.

734. Would the line be used much by merchants going backwards and forwards?—Not to any great extent; they are not a large number.

735. Have you considered what advantages there would be in the Panama line for passengers?—No; I have paid very little attention to that line.

736. You consider that the Cape line is preferable for passengers as well as for merchandise?—Undoubtedly.

737. Are you aware that it is the proposal of the Screw Steam Ship Company to carry out that communication by means of screw steamers?—I am.

738. Do you think that a line which combines the advantages of trade and postal communication is more important than a line which merely effects postal communication, although that postal communication may be more rapid?—I am decidedly of that opinion.

739. Are you aware of the extent of trade between the Eastern Archipelago and Australia?—It is very considerable, and it will continue considerably to increase as the population of New South Wales increases.

740. You have heard the statistics which have been given by the last witness; do you concur to a great extent in those?—I have not got detailed statistics; but in looking over the Sydney papers last year, I find that in 1849-50, from September to September in each year, there arrived at Sydney, 15 vessels from Manilla, 12 from China, 4 from the Mauritius, 1 from Singapore, 1 from Sourabaya, 1 from Calcutta.

741. That does not include the vessels which may have arrived

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arrived at the other ports of the colony?—No, those are entirely to Sydney.

742. Are you of opinion that the importance of that trade is very great to the colony?—Very great.

743. Do you not think the advantage of a communication with the Indian Archipelago is an important consideration in favour of the Suez line?—I think it requires very great consideration, because it is of very great importance; but speaking of the comparative importance of the two, I should prefer the Cape route, in consequence of the much larger amount of business that is done in that direction than the other; I mean comparing the business done between England and Australia with the business done between Australia and the Eastern Archipelago.

744. Do you consider that the merchandise likely to be conveyed between the Eastern Archipelago and the Australian colonies is of a description that would be embarked in steamers?—It is difficult to answer that question. The goods which come down principally are sugars and low-priced tea. I question very much whether the freight which a steamer would charge could be afforded for those goods.

745. You think that the communication between Sydney and Singapore would be chiefly postal communication?—Almost entirely so.

746. But still the effect of that postal communication upon trade would be very important?—Very important. I would remark, upon the subject of carrying goods from Singapore, that the goods imported into Sydney are in very small quantities; they are chiefly from China and Manilla. If cargoes were sent from Singapore it must be by transhipment, which would be very expensive.

747. With regard to the merchandise which passes between England and the Australian colonies, do you consider that that merchandise is likely to be conveyed in steamers?—Yes, I should think to a very great extent.

748. You think that the steamers are likely to take a large portion of that merchandise which is now carried in sailing ships?—They could not take a large portion of it, because they would, I suppose, only go once a month, and there are many sailing vessels monthly now loaded for the colonies; but I think the steamer would have the preference, because she could take the goods so much quicker; she would fill up with the most valuable goods.

749. You are of opinion that, on the one hand, by the line *viâ* Singapore there would be no merchandise carried in the vessels,

vessels, and only a small number of passengers; whilst on the line *viâ* the Cape of Good Hope, you consider that there would be both passengers and merchandise?—That is my opinion.

750. Do you believe that for such a line with those prospects, Government assistance is absolutely necessary?—I do; it will be necessary, in order to get a preference, to carry passengers and goods at very moderate rates.

751. And do you not think that any company could undertake such a scheme without the assistance of Government?—I should not think they could.

752. Can you speak as to the trade between any of the Australian colonies and the Mauritius?—No; there is very little to Sydney; I find that only four vessels arrived at Sydney from the Mauritius in the course of last year, but I believe our southern colonies of Adelaide, Port Phillip, and Van Diemen's Land have considerable business with the Mauritius.

753. Mr. *Wilson.*] In sugars?—In sugars only.

754. Do they export anything to the Mauritius?—Little or nothing; perhaps a few horses now and then.

755. Any grain?—I am not aware of any.

756. *Chairman.*] Do you concur with the statement which was made by the previous witness, as to the length of time that communications take in passing between England and Australia?—I think the witness said that a passage had been made to Adelaide in about 102 days. In the last year the average passage to Adelaide was 108 days, and to Port Phillip 109 days. I have a statement also of the passages of about 600 vessels, from 1839 to 1849, to Sydney. I find the average passage outward bound, in 1839, was 134 days; in 1849, with the same number of ships, the average passage outward was 119.

757. Mr. *Wilson.*] The time is shortened by 20 days?—Yes; that I conceive arises from the superior class of vessels now employed, and their larger capacity.

758. Have you also the averages of the homeward voyages?—The homeward voyage in 1839 averaged 149 days; and in 1849, 138. I can state also the shortest and longest in each year. The shortest outward passage in 1839 was 88 days, and in 1849 it was 92. The longest in 1839 was 177 days, and in 1849, 160. In the homeward passage, the fastest in 1839 was 120 days, and in 1849, 101; the longest in 1839 was 177, and in 1849, 186.

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759. Mr. *Mangles.*] Those are all by Cape Horn?—All by Cape Horn.

760. Mr. *Wilson.*] Vessels never go out by Cape Horn?—I never heard of any.

761. *Chairman.*] Are you aware of the cost paid for an emigrant's passage to Australia?—I have only seen it in the published statements.

762. Can you say whether or not you believe there would be any emigrants carried by the steamers?—I think it is very possible.

763. It has been stated that the passage for emigrants is 12 *l.* a head; do you consider that a steamer would be able to carry emigrants at 12 *l.* a head?—I think they might, or very near it.

764. Mr. *Willcox.*] What is the freight of goods to the Cape of Good Hope by those steamers?—They have carried but very little; I think it is about 4 *l.*

765. What do you suppose would be the charge to Australia?—It would be much less; I would not put down the freight at more than an average of 40 *s.* to 45 *s.* They have been taking goods, I believe, to the Cape by the "Bosphorus" at 4 *l.*, but there were very few tons taken, because the vessel was very nearly filled up with coals, and had not room for cargo; but it would be very different when you get vessels of 1,400 or 1,500 tons.

766. Mr. *Berkeley.*] You are a director of the company which has tendered for the Cape line?—I am a director in the Screw Ship Company; I went into the company in order to induce them to go on to Australia.

767. That company made a tender for the line?—There has been one sent in.

768. *Chairman.*] Have you any further information with which you can furnish the Committee?—I have an account of the importation of wool from Australia, showing the progress of the trade. (*The same was delivered in*).

769. Mr. *Wilson.*] Can you state the rate of increase of the production of wool in those colonies?—It varies from year to year from the commencement. In 1816, I think, the first importation was 57 bales; and for the first 15 or 20 years it was doubled every four years. It is now doubling every six or seven years.

770. What is the amount now in pounds weight?—From Australia, in 1849, it was 149,000 packs, of 240 lbs. each. In 1830, it was 8,197 packs. In 1835, 17,000. In 1840, 40,000. In 1845, 100,000; and in 1849, 149,000.

771. Have

771. Have you grounds to hope that that progress will continue?—As far as I can judge I think it will, if there is a sufficient number of emigrants; but of late years a great number of sheep have been slaughtered for tallow, in consequence of there not being sufficient shepherds to tend them.

772. Was not that extensive slaughtering of the sheep caused by the temporary low price of wool in this country?—I think not so much as by the want of labour.

773. But with a continuous supply of emigrants, such as you have had the last three or four years, you have no reason to think that that increase will not continue?—I think it will continue, but perhaps not in so great a ratio.

774. It is your opinion that it is a lucrative employment?—It is a lucrative employment at present prices.

775. Mr. *Mangles.*] What fare is proposed to be charged for first-class passengers by the Cape of Good Hope route?—£. 80, exclusive of wines.

776. Mr. *Wilson.*] Can you state what the rate for carrying emigrants would be?—No; but I think it could be done at from 12*l.* to 13*l.*

777. Including provisions?—Yes.

778. Provisions for four months?—No; we should not be four months going out; we should not be more than two months.

779. In sailing ships, what is the charge for emigrants?—In sailing ships contracts have been made, including provisions, for 11*l.*

780. Mr. *Berkeley.*] Supposing the three lines were established, the Panama line, the Cape of Good Hope line, and the overland line, do not you think that first-class passengers would very much prefer the overland?—It depends upon the length of their pockets. As to the length of the voyage, either by the overland or by the Cape, there would be very little difference. A person might go for his pleasure overland, to see a variety of countries, but for personal convenience I think he would prefer the Cape, because there is no change of vessel.

781. Mr. *Mangles.*] Are you acquainted with the trade between Australia and New Zealand?—There is considerable intercourse; and it is daily increasing. I am now building a steamer of 400 tons to be employed in the coasting trade between Sydney and Clarence River; and the gentleman who is here superintending the building, informs me she might be very profitably employed in the trade between Sydney and New Zealand.

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782. Have you any knowledge of the trade between South Australia and the coast of America?—Considerable trade has sprung up lately to California.

783. *Chairman.*] Do you consider that a temporary trade?—It is impossible to say.

784. Mr. *Mangles.*] Do you know anything about a discovery of coal fit for steaming in New Zealand?—I have heard it stated that there is coal in New Zealand fit for steaming.

785. Admiral *Bowles.*] Do you consider that there is any route by which a homeward bound steamer from Australia can avoid serious delay by the westerly winds?—There is only one route, which is by Cape Leeuwin, by which I am told that there is no difficulty whatever at any season.

786. Are you a naval man yourself?—I am not.

787. Is there any place now at Sydney where vessels can be careened and refitted, in the event of any accident happening to them?—I am not aware; I understand that there is a large dock building for steamers in Sydney, which will soon be ready.

788. Sir *J. W. Hogg.*] Is there any dock at Port Phillip or Adelaide where steamers can be repaired or careened?—I should think not.

789. Are you of opinion that it would be desirable that the steamer communicating with Australia should call at the different minor ports, or that there should be one trunk communication between England and Sydney, with branch steamers to the subordinate ports?—I think there should be one trunk line, with branches for the subordinate ports.

790. Mr. *Wilson.*] A main steamer going direct to Sydney?—A main steamer going to Sydney, or stopping in Bass's Straits to deliver the mails for the various ports.

Mr. *Frederick Parbury*, called in; and Examined.

Mr. *F. Parbury.*

791. *Chairman.*] HAVE you been connected, and are you still connected, with the Australian trade?—I am.

792. With what part of the colony are you best acquainted?—Principally with Sydney.

793. You have been connected with other parts of the colony?—I have done business with all the colonies.

794. Have you visited other parts of the colony?—Yes; I have visited every part except South Australia and Western Australia.

795. Have

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795. Have you seen a rapid progress in the condition of the colony?—Very rapid.

796. Do you consider that the Australian colonies to the southward and westward have as great a claim to consideration, in any arrangement which may be made to establish steam communication, as New South Wales?—I think if the advantages of steam communication are granted to the Australian colonies, they should be given to every part where it can be managed with no great inconvenience or expense.

797. Have you considered the various projects which are before the public?—I have.

798. Which route do you think would be the most conducive to the general good of the colony in a commercial point of view?—I think the route round the Cape of Good Hope, provided the passage to and from the colony could be accomplished in about the time stated by the screw company.

799. What objections have you to the proposed route by Singapore?—The high rate of passage-money which must be charged to make that line pay, is a strong objection. And the same may be said as regards the freight on merchandise.

800. Are not there very considerable advantages in it?—I think not so much as have generally been stated.

801. Do not you consider that there is great advantage in connecting the Eastern Archipelago with Australia?—Not very great.

802. Is there not considerable trade between the Australian colonies and the Eastern Archipelago?—A very large trade.

803. Do you not think that that trade would be very much developed by rapid communication?—We can only take a certain quantity of goods in Australia, and we get as much as we want now; I do not think the trade would be increased to any great extent by rapid communication with India and China.

804. Have you had any commercial transactions yourself between any parts of the Eastern Archipelago and Australia?—Yes, I have done business with all the India and China ports.

805. What is the character of the trade to India?—From India, that is from Bombay, Madras, and Calcutta, there is not a very large trade to Australia; probably three or four ships annually are generally as many as go to all the Australian ports; but from China and Manilla the trade is very considerable.

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considerable, and there is also a trade between Singapore, Java, and the Australian colonies.

806. Do you consider that if a steam line were established, any portion of that trade would be transferred to the steamers from the sailing vessels?—In a very slight degree; the articles imported are principally of a very bulky description, such as sugar, tea, coffee, and rice, and not of a nature that the importer could afford to pay a steamer's freight.

807. Has not there lately been an export of copper to a considerable extent?—I believe there has, but I am not aware to what extent.

808. Can you speak as to the trade between the Australian colonies and the Mauritius?—There is a large trade between Van Diemen's Land as well as Adelaide and the Mauritius, and a small trade to other parts. There is a trade, to a certain extent, to all of them.

809. Of what does the trade between the Mauritius and Van Diemen's Land consist?—From Van Diemen's Land a large quantity of grain is sent to the Mauritius, and sugar taken in return; and from Adelaide a considerable quantity of grain is shipped; provisions of other kinds are exported from the colonies to the Mauritius.

810. But the chief supply of sugar for the Australian colonies is not from the Mauritius?—The chief supply of sugar for the Australian colonies is from Manilla.

811. But the supply of sugar to Van Diemen's Land is from the Mauritius, is it not?—To Van Diemen's Land more is sent from the Mauritius than from any other part of the world, owing to their getting sugar in return for their grain cargoes. And probably the same may be said of Adelaide.

812. Do you consider that rapid postal communication is the first consideration?—No; I think the advantages of a low rate of passage-money should be combined with rapidity of postal communication. I think that the line which will best develope both those advantages should be the one adopted.

813. That is your view in supporting the Cape line?—Decidedly.

814. Have you considered the Panama line, which has been proposed by the Pacific Steam Packet Company?—Very little.

815. Do you believe that it has been at all before the colonists?—I believe it has been spoken of, but not generally discussed.

816. Do you consider that the bringing New Zealand into the

the communication is of any importance?—It would be important to New Zealand, but not to the colonies generally. Mr. F. Parbury. 15 April 1851.

817. Is there any trade between New Zealand and any of the colonies?—There is considerable trade between New Zealand and Sydney.

818. Is that an increasing trade?—I think it is.

819. Will you state, shortly, to the Committee the advantages which you consider that the line which you favour, namely, the Cape line, possesses over the Suez and Singapore line?—I consider that the moderate rate at which passengers could be taken by that line, as compared with the other, is a great advantage. Another advantage is, the not being under the necessity of changing steamers, which you would have to do by the Singapore and by the Panama lines. Another advantage is the moderate rate at which goods of a valuable description can be conveyed from England to the colony.

820. Do you consider that in expressing that opinion you are speaking the opinion generally of the colonists?—As far as I may judge from the published opinions of the colonists, I should say not.

821. Have you any reason to believe that they have lately changed their opinions?—I think it is likely that they would change their opinions if they thought that the Cape route could be carried out in the time stated by the company. The only route that they seem to consider practicable is that by Singapore, and they have consequently turned their attention more to that than to any other.

822. It has been stated that three committees of the Legislative Council have reported in favour of the Suez line, and that they have voted certain sums of money for that line; do you believe, from your knowledge of the views of the colonists generally, that if they had had the information which subsequent experience has furnished of the working of screw steamers to the Cape, they would have come to the same conclusions?—I think it is very probable that they would, for this reason, that they are very anxious to make Sydney the first port of stoppage, and their wish throughout has been that the steamers should go from Singapore through Torres Straits; and I believe they have offered a certain sum to any company that will take that route and that route only.

823. You think that that report of the committee of the Legislative Council in Sydney was come to from their looking exclusively to the interests of the Sydney colony?—They

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considered themselves, no doubt, before any of the other colonies in the matter.

824. Mr. *Wilson.*] Was the grant of 6,000*l.* confined to the route by Torres Straits?—The committee recommended, I believe, that there should be a smaller sum granted to any other mode of communication by steam; but I believe that was not carried in the Council. They were very anxious to get Sydney as the first port of communication.

825. *Chairman.*] But you are of opinion yourself that the line by Torres Straits is not a line that will give satisfaction generally to the colonies of Australia?—I think they would prefer the Cape line, if it could be carried out in the way proposed.

826. In the event of the Cape line not being carried out, do you believe that the western passage would be preferred, as more applicable to their wants than the passage by Torres Straits?—No; if they can safely go through Torres Straits, I do not see why they should not do so.

827. Do you believe that the passage through Torres Straits would give equal satisfaction to the southern colonies with the western passage by Cape Leeuwin?—No.

828. Mr. *Berkeley.*] Have you resided in Sydney?—Yes.

829. Are you not aware that by the inhabitants of Sydney and New South Wales communication with India is deemed of the utmost importance?—A great deal of stress has been laid upon the communication with India, but the only line which they have had brought before them in a way which they considered at all practicable was the Singapore line; I think if they knew that a line could be opened direct round the Cape of Good Hope, they would prefer it to any other.

830. Do you believe that they consider communication with India even more important than communication with Europe?—Certainly not.

831. Do you not conceive that passengers would prefer the overland route to any other, provided it were reduced to a reasonable price?—No; there is such a strong objection to the frequent change of steamer, and the crossing from Alexandria to Suez, that I think they would prefer the line round the Cape of Good Hope.

832. Do you think so, bearing in mind the difference of time?—Yes, even with the small difference of time.

833. Mr. *Wilson.*] How would that affect postal considerations?—The colonists are most anxious for quick postal communication; but I think they would not forego the advantages

advantages of direct communication with England for the sake of a few days.

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834. Mr. *Divett.*] When you say a few days, what difference do you suppose it would make?—I do not feel competent to answer that question; I do not know the capabilities of the screw steamers; I am presuming that the passage to and from the colony could be performed in something near the time that is stated by the Screw Steam Company.

835. Have you given your attention to the time in which the passage might be carried out by Suez and Singapore?—I have seen statements of it that I have reason to believe are correct.

836. You have not examined that closely, so as to be able to make a comparison between the two?—No. In recommending the Cape line I am always presuming that the passage can be made within a few days of the other route.

837. Mr. *Wilson.*] In nearly the same time?—Yes, within a week.

838. Mr. *Divett.*] Were you rightly understood to say that you do not consider it a great advantage to the Australian colonies to have rapid communication with India?—I do not consider it so great as to forego the advantages they would derive by a direct route to England without any transhipment.

839. You said that you did not know much about the South Australian trade; you are not aware therefore of the extent to which the copper trade is increasing?—I know that there is a very large export of copper ore to England from South Australia, and I understand that some small quantity of smelted copper is sent to India.

840. You are not aware of the quantity of it?—No.

841. Do you consider it important for banking operations that there should be a rapid communication between the Australian colonies and India?—I do not think it would make any great difference. If we had rapid postal communication, the bills would be drawn at a longer date or a longer sight, to allow the goods to get home before the bills became due.

842. Do you attach any importance to passengers going from India to the Australian colonies?—Not a great deal. At present there is nothing but sailing vessels between India and the Cape, and we find that they prefer the Cape to Australia; and even if a steam communication were established between India and Australia, it is probable that in a very short time it would likewise be established between the

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the Cape and India; and I think they would still prefer the Cape.

843. You think that gentlemen in India who wanted to get a change of air for the sake of their health, would prefer to go to the Cape rather than to visit the Australian colonies? —That would appear to be so.

844. Is there any considerable trade between Sydney and Manilla, and do you know anything of that trade?—Yes.

845. Are you aware of the route the ships generally take from Sydney to Manilla?—Six months in the year, from April to September, they go through Torres Straits from Sydney; and they return through the China seas and round by Cape Leeuwin, in nearly every instance.

846. And the other six months of the year what course do they take?—In the other six months of the year they go round to the eastward of New Guinea, and they return as before by Cape Leeuwin.

847. Then, in fact, whether they go by Torres Straits, or go outside New Guinea, depends upon the state of the monsoons?—Yes.

848. What is the length of the voyage to Manilla from Sydney?—It is a most uncertain voyage; not so uncertain from Australia to Manilla as it is from Manilla to Australia. I have known vessels come down in seven or eight weeks from Manilla; and I have known them four months from Manilla to Sydney.

849. In both instances going by Cape Leeuwin?—Yes; perhaps eight weeks is about as short a passage as is ever made.

850. Mr. *Mangles.*] Is not the chief reason that invalids from India do not go to Australia, the uncertainty of getting back again?—There is very little difficulty in getting back again; the communication from India to Australia is very rare, and generally speaking, only by small vessels, such as an Indian would not like to go down in; back again it is very frequent, and in better vessels.

851. Mr. *Divett.*] Do you know the passage through Torres Straits yourself?—No, I have never been through Torres Straits.

852. Lord *Naas.*] Is it your opinion that the mercantile community in Australia have been generally rather lukewarm upon the question of steam communication?—Yes, I think so.

853. How do you account for that?—Speaking as a mercantile

cantile man myself, I would rather that steam communication were not established at all.

854. Is it the general opinion among mercantile men that bills of exchange come home rather too fast already?—I do not think that has anything to do with it; you have merely to alter the date of the bills that are drawn.

855. *Chairman.*] From India do not they always draw at a longer date?—Yes.

856. Lord *Naas.*] You as a mercantile man would rather that steam communication should not be established?—Yes; a mercantile man depends for his profits a great deal upon the fluctuations of the market; the quicker the communication the less will be the fluctuations.

857. Mr. *Divett.*] In fact, the present state of things is more conducive to speculative transactions in commerce than a state of quicker and more certain communication would be; and the merchants like to have their own intelligence in making calculations?—Yes.

858. Mr. *Wilson.*] Upon the whole, do you think that the commerce would increase very much if the communication were more regular and steady?—I do not think it would increase; we generally get more goods than we want as it is.

859. Supposing you had more communication with the mother country, and a larger supply of emigrants flowing in, you would have a greater number of customers?—Then commerce would increase, of course.

860. Mr. *Plowden.*] For the purposes of trade, do not you think that the Cape route would be decidedly the best?—Decidedly, if the voyage can be made in the time that is stated; but I am not able to form an opinion whether it can be performed in the time.

861. Sir *J. Hogg.*] At what date are your bills drawn now from Australia?—They are generally drawn at 30 or 60 days' sight.

862. How long are the goods reaching England?—The goods reach England probably from the time of starting, in about four months; the bills are generally sent by the same ship that conveys the goods; a duplicate bill may come home, and in some cases arrive before the goods.

863. If there were steam communication, instead of shortening the usance of your bills you would be under the necessity of increasing it?—Yes, we would have to draw at 90 days, or four months.

864. Or else the bills would become due long before the goods could be realized?—Yes.

865. Mr.

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865. Mr. *Wilson.*] Would not the acceptor of the bill be in possession of the bill of lading?—Not at the time that the goods arrived; the bill of lading is generally held by a bank; the bank would hold it till the bill was due.

866. The bill of lading and the bill of exchange would arrive in England together?—Yes.

867. And the policy of insurance and the bill of lading would be equal security as the cargo of goods itself?—Yes.

868. Sir *J. Hogg.*] You would not send the bill of lading till the goods had been shipped?—We ship the goods, then get a bill of lading and draw the bill; the bill is not negotiable till the bill of lading is presented; the bill of lading would come to a bank with the bill of exchange; and when it fell due and was paid, the bank would give up the bill of lading.

869. The drawee in this country, having the bill of lading here, and the policy of insurance, would be able to obtain an advance upon goods which have not yet arrived, and to redeem the bill of lading from the bank?—Yes; but you must pay the bill of exchange before the bill of lading is given up.

870. Sir *J. Hogg.*] It would not alter the usance of the bill?—A respectable merchant would have no difficulty in getting an advance from his broker upon an understanding that it was to redeem the bill of lading.

871. Are you aware of the date at which bills from England are drawn upon India?—At six months' sight generally.

872. Has not that always been the usance?—For a long time past.

873. Has any alteration been made in it in consequence of the communication between India and England having been reduced to six weeks?—I believe that previous to steam communication they were drawn at a different date, but of that I am not sure.

874. Mr. *Mangles.*] Do you know what quantity of coals a screw steamer would find it necessary to carry for the long run between the Cape and the Swan River?—I have not the least idea.

Mr. *Frederick Gonnerman Dalgety,* called in; and Examined.

Mr. *F. G. Dalgety.*

875. *Chairman.*] WITH what part of the Australian colonies have you been chiefly connected?—With Port Phillip, during the last eight years.

876. Are

876. Are you aware of the views held by the colonists, with reference to steam communication?—I think I am; but it was not a matter which was much discussed at the time when I left the colony. It has been discussed there since my departure.

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877. Do you consider that that part of the colony is very rapidly rising?—I do; in my opinion it is the most rising of the Australian colonies.

878. From what data do you draw that conclusion?—I would refer the Committee to the statistics of the colony, which I think prove it.

879. Will you state the general results?—The export of wool from Port Phillip in 1849 exceeded in weight the export of wool from the old colony of New South Wales. In 1850 the exports of Port Phillip exceeded considerably the exports of Sydney, speaking with reference to wool, the principal export of the colony. I have the statistics of New South Wales from 1840 to 1849, which were laid upon the table by the Colonial Secretary in July 1850. Referring to those statistics for the year 1849, I find that the exports of wool from Port Phillip were 14,567,005 lbs., while from Sydney they were only 13,396,521 lbs. The total exports from the Port Phillip district, in the year 1848, were 675,000 *l.*; in 1849, 755,000 *l.*; and in 1850, 1,100,000 *l.*

880. What were they from Sydney?—The exports from Sydney, in the year 1848, were 1,155,000 *l.*; and the exports for the year 1849 were only 1,135,000 *l.*; that is to be attributed to the declared value of wool per pound being less than it would be in the previous year. The exports in 1849 would be from the 1st of July 1848 to the 30th of June 1849. I have not the exports of the Sydney district in 1850.

881. Then upon that comparison, you consider that Port Phillip has risen more rapidly than any other colony in Australia?—Yes. It is only of about 13 or 14 years' growth.

882. Can you speak as to the colonial intercommunication between different parts of Australia?—The trade with Port Phillip the last two years has undergone an entire change, consequently it will affect the trade of Sydney, inasmuch as Port Phillip has been, until the last two years, mainly supplied by Sydney with most articles imported from Great Britain, and also with teas and sugars imported from Manilla and China. Now there is a direct trade from China and Manilla with Port Phillip, and the trade of Port Phillip with Great Britain has increased amazingly, by which means of course the intercolonial trade is greatly diminished.

883. Lord

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883. Lord *Naas.*] Is not there a considerable trade between the Mauritius and Port Phillip?—No, it is but trifling. Sugar is principally imported from Manilla into Port Phillip.

884. *Chairman.*] Is there any trade between Port Phillip and New Zealand?—None.

885. Then the conclusion which you draw with reference to the southern colonies is, that considering their importance they ought to participate equally with other parts in any arrangements which are made for steam communication?—I consider that the interests of Port Phillip, South Australia, and Van Diemen's Land outweigh the interests of Sydney, looking at the commerce of those combined colonies, and their importance with respect to Great Britain.

886. Then for the general advantage of those colonies, which line of communication, of the three which have been before the public, do you think is best adapted?—I am certainly in favour of a line of steamers from Singapore through Bass's Straits, connecting the Australian colonies, in conjunction with the Peninsular and Oriental line, with Great Britain, and also with China and with the Indian Archipelago, as offering the greatest advantages. I consider postal communication to be decidedly of paramount importance.

887. Do you consider that that line will be a line for the carriage of merchandise to any extent?—I do not think either line will be a line for merchandise to the extent anticipated by the projectors of the companies; but in my opinion the trade between South Australia and Port Phillip, and Singapore, Manilla, and China, is growing into importance. I think that copper ore, being an article of considerable value, and occupying but small space, would be sent by the return steamers, and perhaps there are other articles that might bear a high rate of freight.

888. Can you state the amount of copper ore which is likely to be sent?—No; I know nothing of the trade of South Australia; but I know that they are smelting copper ore there, and that a large quantity of copper has been exported to Singapore.

889. You do not know what proportion of the export of copper from South Australia goes to India, and what proportion to England?—No; but I saw in the Singapore tradelist that 120 tons of pure copper were taken up in one vessel bound from Adelaide to Singapore.

890. Mr. *Mangles.*] Was that on its way to China?—I believe that Singapore being a great depôt, it is dispersed thence over the whole of India.

891. *Chairman.*]

891. *Chairman.*] You consider that there is not much merchandise sent from the colonies to this country that would bear the cost of steam conveyance?—Not as a return cargo; I think that neither wool nor tallow would bear a high rate of freight. We have a very superior class of vessels in the trade, and I think they would always have the carrying trade, both of passengers and merchandise.

892. Mr. *Wilson.*] Do you include in that passengers for England?—I think so; I think that to the greater number of passengers, both emigrating to and returning from Australia, money is a greater object than time. To those to whom time is more valuable, the Singapore route offers, I think, equal advantages to the other, and it is less monotonous.

893. Mr. *Divett.*] Are you well acquainted with the whole district of Victoria?—Yes; I have been there eight years.

894. Do you consider Melbourne to be the most rising city in the Australian colonies?—I do; for when I went there in January 1843, the population was under 10,000; the population is estimated now at from 25,000 to 30,000.

895. Do not you conceive that looking at the future, the densest portion of the population of the Australian colonies will have Melbourne for its outlet?—My opinion may perhaps be rather a prejudiced one; but I resided for seven years in Sydney, prior to living in Victoria; and I think that the natural advantages of Port Phillip are very superior to those of Sydney, particularly as regards the fertility of the soil, and the extent of land available for agricultural purposes. Our port is certainly inferior, being more difficult of access.

896. Is there not a much larger extent of fertile land near Melbourne than there is in the New South Wales district?—The whole of the southern coast, from Portland Bay to Port Phillip Heads, is, I imagine, the finest soil, I was going to say in the world; it is a deep alluvial deposit; it commonly bears 40 to 45 bushels of wheat to the acre.

897. Mr. *Mangles.*] You said that you considered the Singapore route more important than the other; what did you mean by the other?—I meant the Cape of Good Hope.

898. *Chairman.*] Have you considered the merits of the Cape line?—I have thought over it.

899. What is your opinion of it?—I have stated before that being of opinion that rapid postal communication is of paramount importance, I give the preference to a line of steamers connecting us with Singapore.

900. Has

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900. Has your attention been called to the Panama line?—No.

901. Did you hear any mention made of that line in the colonies?—No.

902. Do you believe that it was before the public at all?—No; I think as regards the southern colonies it is of no interest whatever; it might apply to Sydney.

903. Mr. *Mangles.*] You never considered that line at all?—No.

904. You spoke of postal communication being of paramount importance, and you expressed an opinion that the expense of the passage money by the Singapore line would deter passengers from going by that line?—Yes; I think whatever route is adopted the sailing vessels will always carry out passengers cheaper, and therefore a greater number of passengers will go by sailing vessels.

905. The expense by Singapore is stated at 182 *l.*; supposing that by the Panama line they can take passengers at 105 *l.*, would not that be an inducement to take that line?—It would be an inducement for the class of passengers travelling by steamers.

906. More people would go at 105 *l.* than at 182 *l.*?—Yes; but many people would prefer paying only 60 *l.* by a sailing vessel.

907. Mr. *Plowden.*] Is there any export of wool from Australia to China?—No.

Martis, 29° die Aprilis, 1851.

MEMBERS PRESENT.

Lord Naas.	Mr. Mangles.
Mr. Divett.	Mr. Henry Currie.
Mr. Willcox.	Mr. Plowden.
Mr. Bright.	Mr. Cowper.
Sir James Hogg.	Mr. Wilson.
Mr. Scott.	Mr. Henry Berkeley.
Admiral Bowles.	

VISCOUNT JOCELYN IN THE CHAIR.

Mr. *Robert Richard Smith,* called in; and Examined.

Mr. *R. R. Smith.*

908. *Chairman.*] WHAT office do you hold in the Post-office?—I am Surveyor of the North Midland district in Ireland at present.

909. Were

909. Were you not employed in the colonies in the years 1845, 1846, and 1847?—I was a member of a commission for inquiring into the postal arrangements in the Australian colonies.

910. What were your duties as a Commissioner?—To inquire as to the rates of postage, the mode of communication, and all matters connected with the post-office in those colonies, the view at that time being entertained of bringing the post-office in the colonies under the Post-office in London.

911. Mr. *Bright.*] In what colonies were you employed?—In each of the Australian colonies, including New Zealand.

912. *Chairman.*] Can you give the Committee any information as to the mode in which the postal revenue is collected in the colony of Australia, both as regards its external and internal collection?—When I was in the colonies, there was a packet communication from England to Sydney by sailing vessel; the rate of postage was 1*s.*, prepaid in this country. A colonial ship-letter rate of 3*d.* was also in New South Wales charged upon letters brought by the packet, in addition to any inland rate on such as were conveyed into the interior. The packet arrangement has been discontinued. At present the letters are conveyed by private ship. The ship-letter rate is 8*d.*, which is received here, and they levy their own rate in the colonies. The rate was 3*d.* in New South Wales, 4*d.* in Van Diemen's Land, and 4*d.* in New Zealand.

913. Have you any returns showing the amount of revenue which has been received from postage to Australia by the Imperial Exchequer, drawing a distinction between the different colonies?—From the information we obtained, I have prepared a return of the number of letters and newspapers passing between Australia and Great Britain for 12 months; this is an exact return of the numbers to and from the colonies, and I think includes every letter which passed through the post-office.

914. For what year is that?—In respect to New South Wales, Port Phillip, and Van Diemen's Land, for 1844; to South Australia and New Zealand, 1845; and to Western Australia, 1846.

915. Will you state to the Committee the information which that return conveys?—The number of letters dispatched from all the colonies to England, in the years respectively referred to, was 136,588; the number received from England was 122,833; making a total of 259,421.

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916. Does that return refer only to the Australian colonies?—It includes Van Diemen's Land and New Zealand. If the Committee will allow me, I will put in the return. It is not an estimate, but an exact statement of the number of letters for that period.

[*The same was delivered in, and is as follows:*]

RETURN of the Number of LETTERS and NEWSPAPERS passing between the *Australian Colonies* and *Great Britain* in Twelve Months.

	Letters dispatched to England.	Letters received from England.	Newspapers dispatched to England.	Newspapers received from England.
New South Wales, 1844 - -	68,659	69,254	95,335	106,031
Port Phillip, 1844 - - -	14,629	10,993	19,016	13,047
	83,288	80,247	114,351	119,078
Van Diemen's Land, 1844 -	31,529	22,143	23,520	33,000
South Australia, 1845 - -	9,280	8,494	21,337	14,694
West Australia, 1846 - -	3,303	3,017	2,747	3,187
New Zealand, 1845 - -	9,188	8,932	9,100	12,650
	136,588	122,833	171,055	172,609
		136,588		171,055
		259,421		343,664

917. Mr. *Bright.*] Have you any return for a later period than that?—I have no later return. I place some value upon the return I have given in, for this reason, that it includes all letters dispatched from those colonies to England, and also all received from England. For instance, in the absence of any packet ship direct from the colonies, letters are often sent by way of India, for the purpose of acceleration. Those letters would come into England with the Indian letters, and there would be no return taken of them, therefore it would appear to the disadvantage of the colonies. This return is extracted from many others prepared under our superintendence when we were in the colonies; I thought the information might be of some service, and I made the extract for the Committee.

918. *Chairman.*] Is there no such account kept at the Post-office in London?—Not of the number of letters, generally speaking. There is a return during six months in 1848,

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1848, which I believe Mr. Page has; but the result would be much the same as this, I think.

919. There is a return which has been moved for by Lord Seymour; do you know of that return?—I am not aware of it.

920. You do not know whether that return tallies with the return you have now given in?—I do not.

921. Have you any reason to believe that much loss of postal revenue takes place in consequence of the custom of each ship carrying a letter-bag?—I think there may be some loss with reference to the Imperial postage rates, but not to any great extent as regards the colonies; because when the ship arrives, the population being small, the post-office immediately look after the ship's letter-bag; and I think this return of mine includes nearly every letter which reaches the colony in the ship's bag. There may be some not included. I am quite sure, with regard to letters despatched to England, a great many are sent in the ship's bag upon which the ship-letter rate of postage would not be levied.

922. Can you give the Committee any information as to the postal communications between India and Australia?—They are all by private ships, as between England and Australia. I have drawn up a return of the number of letters passing between Australia and India during 12 months, the same period for which the other return was prepared: the total number dispatched from the colonies to India was 4,738; the number received was 5,065.

[*The Return was delivered in, and is as follows:*]

RETURN of the Number of LETTERS passing between the undermentioned *Australian Colonies* and *India*, &c. in Twelve Months.

	DISPATCHED.							TOTAL.
	Calcutta.	Madras.	Bombay.	Ceylon.	China.	Batavia.	Singapore	
New South Wales, 1844 -	1,954	477	415	19	497	147	181	3,690
Port Phillip, 1844 - -	19	2	6	- -	1	1	- -	29
Van Diemen's Land, 1844	Sent to India, 533			- -	34	- -	- -	567
New Zealand, 1845 - -	Ditto - - 37			- -	6	- -	- -	43
South Australia, 1845 -	Ditto - - 102			6	20	- -	44	172
West Australia, 1846 -	Ditto - - 93			47	- -	11	86	237
					TOTAL Dispatched - - -			4,738

	RECEIVED.							TOTAL.
	Calcutta.	Madras.	Bombay.	Ceylon.	China.	Batavia.	Singapore	
New South Wales, 1844 -	1,251	673	831	- -	703	28	321	3,807
Port Phillip, 1844 - -	66	- -	62	- -	331	- -	- -	459
Van Diemen's Land, 1844	Received from India, 157 -			- -	- -	- -	- -	157
New Zealand, 1845 - -	Ditto - - -		136 -	- -	- -	- -	- -	136
South Australia, 1845 -	Ditto - - -		165 -	- -	- -	- -	217	382
West Australia, 1846 -	Ditto - - -		56 -	29	- -	- -	39	124
						TOTAL Received - - -		5,065

I have also a return of the number of letters passing between the several Australian colonies, including New Zealand, in 12 months.

[*The same was delivered in, and is as follows:*]

RETURN of the Number of LETTERS passing between the several *Australian Colonies*, including *New Zealand*, in Twelve Months.

Received at	New South Wales.	Port Phillip.	Van Diemen's Land.	South Australia.	Western Australia.	Port Essington.	New Zealand.	Total Number of Letters.
New South Wales, 1844 -	- -	- -	10,427	1,802	180	- -	3,792	16,201
Port Phillip, 1844 - -	- -	- -	7,032	601	51	- -	3	7,687
Van Diemen's Land, 1844	18,065	- -	- -	1,295	171	- -	549	20,080
South Australia, 1845 -	2,941	903	2,287	- -	329	- -	194	6,654
Western Australia, 1846 -	Total number of letters from New South Wales, South Australia, Van Diemen's Land, and New Zealand - - - - -							952
New Zealand, 1845 - -	7,041	- -	808	310	11	- -	- -	8,170
							TOTAL Number of Letters - - -	59,744

923. From your knowledge of Australia, what are your anticipations as to the probability of a large increase in the postal revenue?—I think from the rapid progress the colonies have made and are making, the increase of correspondence will be very large. I consider these numbers would be found to be very much under the present number of letters, could a return be now obtained. A reduction of the passage from four months to two, taken in connexion with the rapid progress the colonies are making, would undoubtedly increase the correspondence to a great extent.

924. Do you think it would be necessary in order to increase the correspondence to any considerable extent to lower the rate of postage at present levied?—I apprehend that were a steam-

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a steam-packet communication established, the sea rate of postage throughout would not be lowered; for instance, take New South Wales; if the ship-letter rate be as when I was there, 3*d.*, the postage throughout is now 11*d.*; 8*d.* being charged in this country. When I was in the colony before mentioned, and I am not aware of any alteration since, on all ship-letters to and from the interior, the inland postage in full was charged in addition to the ship-rate received there, and one rate paid in this country; so that altogether the postage was high. I do not know whether the colonial government has yet reduced the inland postage; I think it was in contemplation to do so. Assuming that the packet-rate from this country would clear letters as far as the capital or port of arrival is concerned, and a moderate inland rate in addition charged on letters to the interior, the effect would be to reduce the postage on the whole, and no doubt increase the correspondence.

925. Can you state what was the amount, including the Imperial postage and the postage paid in the colonies, paid upon a single letter from England to Sydney?—If by private ship, it was 11*d.* if the letter were delivered in Sydney; if by packet, it was 1*s.* 3*d.*, because we levied a packet rate of 1*s.* here, and they still charge there the 3*d.* colonial rate.

926. What was the case as to the other colonies?—Van Diemen's Land was 4*d.*; South Australia, 8*d.*; New Zealand, 4*d.*; and Western Australia, 6*d.*

927. Can you speak as to the increase which there has been in the revenue derived from postage in the colonies where steam communication has been established, since the establishment of that communication?—I cannot.

928. Mr. *Divett.*] Are the Committee to understand you to say that you believe there is no return kept in the Post-office here of the number of letters to and from the Australian colonies?—I believe there is a return for six months, but I am not fully aware of the arrangements as to keeping accounts here.

929. You speak only from the knowledge you derived while you were in the colony?—Yes. I know that this is not an estimated return, but a return of the actual number of letters for the period.

930. Those rates respectively of 8*d.* and 1*s.* applied, did not they, to letters not exceeding half an ounce?—Yes.

931. Are you aware of the nature of the arrangement between the Government and the owners of the sailing packets;

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was it the voyage out and home for which the Government agreed with them?—I think the voyage out only.

932. What was the arrangement with respect to the home voyage of the sailing packets?—The letters were sent home by private ships during the time I was there.

933. Did not the contract which the Government made with the owners of those sailing vessels apply likewise to the voyage home?—I do not know what the arrangement was which the Government made; all I can say is that the arrangement was only carried out with respect to the voyage out.

934. The bags were sent home by private ships?—Yes.

935. Without reference to any arrangement of the Government?—Yes.

936. Therefore you cannot give the Committee any information with respect to the average course of the post under that arrangement?—The average time from England out to Sydney was from 120 to 130 days.

937. Can you state the length of the shortest passage?—The "Meg Merrilies," clearing from London on the 1st of May, sailed on the 2d, and arrived in Sydney the 1st of August; that was only 3 months and 14 days.

938. What was the length of the longest voyage?—Five months and a day.

939. I understood you to say that you were not aware that there was any arrangement made with the Government except for the outward passage?—I believe that the arrangement commenced only for the outward voyage. Since the question was first asked I have endeavoured to remember the exact arrangement made, and I am under the impression that after I left the colony an arrangement was carried out for the homeward voyage.

940. Are you not aware that the first arrangement was a payment of 100*l.* for the outward voyage; and that subsequently there was an arrangement for a payment of 150*l.* for the voyage out and home?—The arrangement was only carried out for the outward voyage, when I was there, and without referring to my papers I could not say.

941. In your answers to the questions as to the number of letters, you stated nothing respecting the amount of postage received. Can you inform the Committee what was the amount of postage received, or give them a notion of the size of those letters and their weights?—The only way would be to obtain a statement of the actual number of letters, and to allow so much for letters above half an ounce; you would then

then arrive at the amount which would be produced by the ordinary packet-rate, which is 1*s.* the half ounce.

942. Mr. *Willcox.*] In giving a return of the number of letters, you gave only the number, but did not state whether they were double or treble?—I gave merely the actual number. For letters above half an ounce I should allow 10 per cent.

943. Mr. *Divett.*] From the return before you, can you give the Committee the total amount, so as to arrive pretty nearly at the average per letter?—It may be done. The number of letters dispatched from all the colonies in one year was 136,588; the number received was 122,833; making a total of 259,421.

944. What was the amount received in money?—That would be an estimate; by adding 10 per cent. for letters above half an ounce, the Committee will arrive, I think, pretty nearly at the result which is desired. A calculation made now of the revenue derived in the colony from ship letters, would, I think, afford no correct data, because the rate of postage is different from what would be the rate under a packet arrangement. The postage received in England is only the ship-letter rate. I cannot tell what would be the rate of postage to Australia under a packet arrangement.

945. Taking the average number of letters in England, you find that the average rate upon the whole correspondence of the kingdom amounts to very little above a penny. With respect to colonial correspondence, is not the average bulk of the letters much higher than in England?—I should allow about 10 per cent. for letters above half an ounce; that is ten rates more. In this calculation I do not include Government, which, when I was in the colony, were not charged. A higher per-centage would have also to be allowed for franks of members of Council.

946. Mr. *Mangles.*] Would not a large portion of them contain bills of lading?—Not exceeding half an ounce, probably.

947. Mr. *Wilson.*] You said that the outward letters of which you have spoken would include the ship letters?—Yes, the great bulk of those that go by ship bags.

948. Did the number which you gave as the number of letters homewards also include the ship letters?—No, it would only include those which passed through the post-office in Sydney; I do not think they were sent home in ships' bags to the same extent as that in which they were received.

949. You stated the number of letters which passed

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between India and Australia; have you any account of the number of letters which passed between the Australian colonies and the Cape of Good Hope?—I have not prepared a return similar to the one for India, &c.; but I can do so from the returns prepared in Australia, if the Committee desire it.

950. You have no information upon the subject?—I have not prepared a return.

951. The number must have been very small?—Very small.

952. Mr. *Scott.*] Can you give the Committee any account of the present mode of transmission of newspapers from Australia?—They are sent by private ships now, and so they were when I was there. This return includes all which are sent by private ships and by the packets.

953. Mr. *Wilson.*] Provided they pass through the post-office?—Provided they pass through the post-office.

954. Mr. *Plowden.*] Can you give the Committee any idea of the amount of receipts in money in any particular year, from the postage of letters between the Australian colonies and Great Britain?—I can only refer to the estimate I have prepared, which shows the amount of postage that would be levied at single rates upon the number of letters to and from Great Britain.

955. *Chairman.*] Have you any further information to give to the Committee on the subject which is before them?—I have estimated the revenue on letters to and from Great Britain at the packet rate, and the inter-colonial letters as well as letters to and from India, allowing for the increase since I was there, at about 20,000 *l.*

956. Upon what do you base that estimate?—Upon these returns.

957. And the increase of the population?—Yes.

958. Those are letters going both ways?—Both to and from Great Britain. All intercolonial letters; in the latter case, the number received at each colony. In respect to India I have also only taken it one way, because, supposing a packet established, some letters would still be sent by private ships, and allowance must be made for them.

959. Looking to the increase of correspondence in other colonies where steam communication has been established, for instance, in Canada, and to the amount of postage received in those colonies, do you think any calculation can be drawn as to the increase which would take place in the Australian colonies in the same way, supposing steam communication

were

were established there?—That must be a very nice calculation, in order to make it worth anything; the circumstances of the colonies are so different; Canada is a comparatively densely populated country, but in Australia the population is scattered; the larger portion of it is a pastoral country.

960. Mr. *Divett.*] You allude to the general density of population in Canada, as compared with the general scarcity of population in Australia?—Yes; in Sydney there is a large population, and in Adelaide, but not in the interior.

961. Do you happen to know anything about the increase in the number of letters passing between this country and Australia since the packet communication was established?—No, I do not. I think that a tolerably correct estimate may be formed of what would be the revenue received under a steam packet arrangement; I have made an estimate upon the subject. The rate is of course a suppositious one, as I cannot tell exactly what it would be.

962. *Chairman.*] What rate of postage do you assume?—I am assuming it to be 1 *s.*, the uniform rate existing in respect to other colonies to which there is a packet arrangement.

963. Will you state what you assume to be the probable amount of revenue?—I have stated the number of letters, and adding 10 per cent. for letters above half an ounce, it would give the number of single rates 285,363; that would yield, at 1 *s.* each rate, 14,268 *l.* 3 *s.* I have estimated the increase since 1845 at 4,000 *l.*, which I think would be fair; that would give a revenue at the present time, at the packet rate, of 18,268 *l.*

964. Mr. *Mangles.*] Have you allowed anything for newspapers or books?—Only the 10 per cent. I have not in the estimate made any calculation as to newspapers.

965. Mr. *Wilson.*] In what way do you arrive at the increase which you have allowed since 1845?—Generally; taking into consideration the increase of the population.

966. You calculate the increase of letters to be in proportion to the increase of the population?—Not exactly in the same proportion; mine is an estimate of an increase upon a given amount. I think it would be as much if it did not exceed that amount.

967. Mr. *Divett.*] Are you aware that at this moment the practice of labouring people who have gone there remitting small sums of money to their friends in this country, is immensely increasing?—I should presume it to be so; I am not aware of the fact. With respect to the increase of revenue,

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revenue, the route would have something to do with it; if the packet went by South Australia, the letters between Great Britain and all the colonies, also a large portion of the intercolonial letters, would be conveyed by it. This would considerably augment the amount of revenue derived. The amount on intercolonial letters would not however be large.

968. Mr. *Cowper.*] The estimate you have given would not include letters from any but the Australian colonies?—No; and I am assuming a rate of 1*s.* in respect to letters to and from England.

Mr. *John Burdwood*, of the Hydrographic Office, called in; and Examined.

Mr. *J. Burdwood.*

969. *Chairman.*] WILL you state to the Committee the distances upon the map before them?—From Southampton to Gibraltar, 1,172 miles; from Gibraltar to Malta, 988 miles; from Malta to Alexandria, 815 miles; from Alexandria to Suez overland, 207 miles; from Suez to Aden, 1,310 miles; from Aden to Point de Galle, 2,121 miles; from Point de Galle to Singapore, 1,497 miles; from Singapore to Batavia, 520 miles; from Batavia to the north point of Timor, 1,240 miles; from Timor to Cape York, 935 miles; from Cape York to Sydney, outside the Barrier Reef, 1,905 miles; inside it would be 135 miles less; the total from Southampton to Sydney would be 12,710 miles by the outer route; by the inner it is 135 miles less. The route to the southward of Australia through Bass Straits is as follows:—From Southampton to Point de Galle as above, 6,613 miles; from Point de Galle to Cape Leeuwin, is 3,129 miles.

970. Mr. *Divett.*] You have taken the whole distance from Galle to Cape Leeuwin; will you give the Committee the division of the distance between the Keeling Islands?—It is as nearly as possible half way.

971. They are very low islands, are not they?—I do not know.

972. *Chairman.*] Will you proceed with your statement of the distances?—The distance from Cape Leeuwin through Bass Strait to Sydney is 1,985 miles.

973. Mr. *Divett.*] Will you give the Committee the intermediate distances from Swan River to Adelaide, from Adelaide to Port Phillip, and from Port Phillip to Sydney?—From Swan River to Adelaide is 1,345 miles; from Adelaide to Port Phillip is 505 miles; from Port Phillip to Sydney is 602 miles.

974. According

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974. According to that calculation the direct distance from Swan River to Sydney, passing through Bass Strait, without calling at the intermediate colonies, is 2,141 miles; calling at those colonies it is 2,452 miles?—I believe that would be the case.

975. Have you ascertained the distance from Batavia to Swan River?—No.

976. *Chairman.*] Will you next state the distance by the Cape of Good Hope?—From Southampton to Bonavista is 2,374 miles; from Bonavista to the Cape, 3,846 miles; from the Cape, the sailing distance, to Wilson Promontory, 5,971 miles; from Wilson Promontory to Sydney, 443 miles.

977. What is the distance from the Cape to Swan River?—On the great circle, 4,672 miles

978. Have you calculated those distances as a steamer would run?—Yes.

979. Are you speaking of a paddle steamer?—Yes. I have another calculation with respect to a screw steamer of the route *viâ* the Cape of Good Hope; that is to say, rounding it without touching at it, or the route which a screw steamer might follow to avail herself of the south-eastern trade and of great circle sailing, by a composite route. The highest latitude would be 47° 30′, which might be perhaps considered too high. From Southampton to Bonavista, as before, would be 2,374 miles; from Bonavista to the Equator, in 18 degrees west, 1,012 miles; from the Equator at 18 degrees west to 28 degrees south, and 26 deg. 15 min. west, 1,746 miles. The great circle, which intersects that point and Wilson Promontory, would take a ship too far to the southward; instead of that, we take what we call a composite route. A screw steamer would cross the Equator in 18 degrees west; she would then carry the south-eastern trade till she came up to 28 degrees south; she would then reach the westerly winds. The vertex of the above-mentioned great circle would take her too far to the southward, instead of which she should adopt the arc of a great circle, the vertex of which is 47 ½ degrees. When she arrives in that latitude she would run down her longitude on that parallel till she comes to a corresponding great circle intersecting Wilson Promontory. That is what is termed the composite route.

980. Is that the route that a screw steamer would have to take?—Yes; she ought to follow that route.

981. Would that be the best route for her to take?—Yes; yet, as I stated in answer to a former question, as 47 ½ deg. might be considered too high, a lower latitude would be preferable,

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preferable, as the vessel running down her longitude in or about the parallel of 47½ degrees, would pass near the Crozet and other islands, the positions assigned to which are doubtful, and where also she might probably fall in with ice; however, the principle of great circle sailing by the composite route ought to be adopted.

982. Mr. *Wilson.*] Leaving the Cape of Good Hope altogether?—Yes.

983. How far from the Cape would she pass?—About 600 miles.

984. Mr. *Cowper.*] If she touched at the Cape she must make a longer route than the one you mention?—Yes.

985. Mr. *Divett.*] Are you able to give the Committee the total distance by the shortest great circle sailing which a screw steamer could take, compared with the longer one touching at the Cape?—No.

986. Will you furnish that information to the Committee?—I will.

987. Mr. *Wilson.*] Can you tell the Committee the difference of distance between the route of the overland mail which goes by Marseilles and that by Trieste?—From London to Dover by rail is 88 miles; from Dover to Calais across the Channel, 22 miles; from Calais to Marseille we cannot exactly ascertain, but as the crow flies it is 482 miles; from Marseilles to Malta, 650 miles; from Malta to Alexandria.

988. In the last calculation you have given us, you have included the land carriage from London to Dover; in the other case you did not include the land carriage from London to Southampton, did you?—No.

989. Now take the route by Trieste?—From Dover to Ostend, 62 miles; from Ostend to Trieste, as the crow flies, 546 miles; from Trieste to Alexandria, 1,210 miles; from Alexandria to Suez, as before.

990. Mr. *Divett.*] You are not able to give the Committee any detailed information as to the state of the communications in Germany or France?—No.

991. *Chairman.*] Now will you give the distances taking the line by Panama?—From Southampton to St. Thomas, 3,587 miles; from St. Thomas to Chagres, 1,025 miles; from Chagres to Panama by railway, about 40 miles; that is taken from a rough drawing of the proposed line; from Panama to Huaheine in the Society Islands, 4,562 miles; from Huaheine to Sydney, 3,277 miles.

992. Mr. *Divett.*] You have taken the distance from Panama to Sydney in two divisions only; can you state the distance

distance taking New Zealand in the way?—That I have not calculated.

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993. Mr. *Wilson.*] Are the distances which you have given by the route which a steamer would go?—Yes.

994. *Chairman.*] From Panama to Sydney how have you calculated the distance; is it the route by which a screw steamer would run?—Yes.

995. Both going and returning?—Yes.

996. Mr. *Divett.*] Can you give the Committee the course that a screw steamer would have to take in the Pacific, as well as the course that she would have to take upon the great circles you have given us before?—In those latitudes, no benefit would be derived from what is termed great circle sailing.

997. Mr. *Bright.*] What is the total distance from Southampton by the Panama route?—12,491 miles.

998. *Chairman.*] Not touching at New Zealand?—No.

999. Will you state the total distances of the different lines?—From Southampton to Sydney, by Torres Strait, is 12,710 miles; from Southampton to the southward of Australia, through Bass Strait, 11,727 miles; from Southampton by the way of the Cape of Good Hope, 12,634 miles, that is as a paddle steamer would go, stemming the south-east trade wind.

1000. What is the distance which a screw steamer would go?—13,280.

1001. Mr. *Wilson.*] Not touching at the Cape?—No.

1002. Mr. *Divett.*] Have you given your attention to the return course which a screw steamer would take in coming from Australia?—No; but she would have to encounter terrific winds.

1003. *Chairman.*] Will you also furnish the Committee with the distances between the Cape of Good Hope and the Mauritius, and the Mauritius and Point de Galle?—I will.

Mr. *Frederic George Moore*, called in; and Examined.

1004. *Chairman.*] ARE you acquainted with the Australian colonies, and with New Zealand?—Yes.

Mr. *F. G. Moore.*

1005. In what profession were you engaged there?—I have made many voyages out to India and Australia, and I have been about ten years resident in New Zealand.

1006. Were you commander of a vessel?—Yes, part of the time I was.

1007. In

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1007. In the mercantile service?—In the mercantile service chiefly.

1008. Were your chief communications between England and Australia, or intercolonial communication?—Between England and Australia till 1839; I was 15 years nearly in various services; during which period I visited most parts of the world, and nearly all our colonies.

1009. With what parts of Australia are you most acquainted?—With Adelaide and Sydney principally, and also Hobart Town.

1010. Can you state the views and opinions of the colonists in respect to steam communication with this country?—In New Zealand I can more particularly; and I heard at Sydney also, in my way home, that it was very probable there would be steam communication; and everybody I had any communication with on the subject, merchants and others, seemed very desirous that it should be carried out as soon as possible.

1011. Is there any steam communication at present between New Zealand and any of the Australian colonies?—None whatever.

1012. Has there been a great want felt of that communication?—Particularly so in New Zealand; they are very much isolated, from the want of a regular communication between those islands and England. The letters which reach New Zealand go to Australia first, except those mails conveyed by an emigrant ship, and unless there is a regular communication established between Australia and New Zealand the letters may lie in Sydney months before they reach New Zealand.

1013. Is there any trade between New Zealand and any part of Australia?—There is a good trade now springing up. We are supplying Sydney with wheat and the various farm productions of New Zealand. When I first went to New Zealand ten years ago it was the reverse, they supplied us from Sydney with all we wanted almost. Now we are growing more than we require at some of the settlements, and are supplying Sydney.

1014. What is the return trade?—Principally cattle, horses, and sheep; there are passengers now and then. Every ship which comes down, indeed, has as many passengers as she can well accommodate.

1015. What point of New Zealand would you fix on as giving the best means of general communication with the colony?—Cook's Straits, as being the most central, and as having

having all the principal mercantile settlements situated there.

1016. What is the population of New Zealand at present?—When I left, two years ago, it was 30,000; it is now increased to about 37,000. I speak of the European population; there are upwards of 100,000 natives.

1017. Is there any considerable emigration to New Zealand?—It is increasing every day. The communication between England and New Zealand is now, I think, increasing very much; there are more ships leaving England for New Zealand than ever left at any period before. There is a ship for the Canterbury Settlement leaving every month, and I believe during this month there will be four or five ships leave; there are also private ships, carrying colonists and merchandise, frequently.

1018. Which is considered the capital of New Zealand?—Auckland is considered the capital, inasmuch as the Government is situated there; but the colonists do not consider it the most important part of New Zealand. The greatest amount of commerce is in Cook's Straits. Most of the settlements are quite detached from Auckland; at present it is sometimes three months before we can get a letter from Auckland.

1019. Has there been any proposal in New Zealand for the purpose of establishing an intercolonial steam communication?—I laid a proposition before the New Zealand Company two years ago, and they were very favourable to it at that time; but circumstances, I believe, over which they had no control, prevented them from carrying it out. They issued a form of tender, and advertised for vessels suited for that purpose. I proposed that they should use screw vessels.

1020. Mr. *Mangles.*] There is a fund, is not there, for the purpose of carrying out steam communication?—There is, belonging to one of the settlements in Cook's Straits, Nelson.

1021. What is the amount of it?—The portion of it which is devoted to steam communication is upwards of 10,000*l.*

1022. That is intended for intercolonial purposes, is not it?—I believe they have full power, inasmuch as the money belongs to the settlers, who contributed it, to apply it to any purpose. It was intended to be given in the way of bonuses to any company carrying out an efficient plan of steam communication for the New Zealand coasts.

1023. *Chairman.*] In what manner are the European population

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population generally located in New Zealand; do they reside in considerable towns, or are they dispersed in small societies?—They are generally in pretty compact towns. At Wellington there is a population of about 7,000. At Nelson, where the fund for steam communication was raised, which is in Cook's Straits also, upon the Middle Island, there is a population of about 4,000.

1024. Mr. *Wilson.*] Are not there a great many natives inhabiting the towns you speak of?—They hang about the outskirts of the town, but we do not include them in the population of the towns; generally speaking, they are detached, and live in settlements of their own, scattered along the coasts.

1025. *Chairman.*] You have stated that Cook's Straits would be the point, the selection of which would give the greatest satisfaction to the colonists in New Zealand. To what point in Australia do you think they would wish the communication to be?—Sydney is the port with which we have the most communication.

1026. Have you ever, during your residence in New Zealand, heard the question mooted of a communication *viâ* Panama?—Yes; it was very little mooted. By letters received from one or two parties who have been interested in the question of steam navigation for a long time, I heard that such a route was in contemplation; but we thought it almost too grand a plan at that time to be carried out immediately, though every one saw the importance of any plan of communication from England. It was reported also that there was a plan for carrying it out by way of Singapore; but I believe the preference was given, generally speaking, to the route by the Cape of Good Hope; the general feeling, as far as I heard, was, that it would be most serviceable.

1027. Is there any trade between New Zealand and South America?—Yes, there is a trade springing up since I left, as I am informed. Small sailing vessels, laden with farm and dairy produce and timber from New Zealand, are taking it down to California. Some of the vessels are as small as 60 or 80 tons, and I have heard that they make very successful voyages.

1028. It is supposed to be a very tranquil passage across from the coast of America to New Zealand?—Yes.

1029. You rarely hear of any great storms there, do you?—Very rarely, I believe; the general report among seafaring men is, that the seas are tranquil.

1030. Have

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1030. Have you ever made the passage yourself?—Yes, I have been down to Callio.

1031. Were you in command of a vessel then?—No, I was the chief officer of a vessel.

1032. Do you know what the mineral products of New Zealand are?—Copper, coals, iron, lead, sulphur, &c. &c.

1033. Where has coal been found in New Zealand?—The first coal which was discovered I discovered myself, in Wanganni, west entrance of Cook's Straits; it was the best coal that has ever been found; it was a large vein of six or eight feet thick. I was going into the harbour by mere chance, and in looking about, as I generally do, making notes of what I saw, I came upon a large vein of coal. At that time it was not known in New Zealand that coal had ever been seen there; I took 50 tons of it up to Wellington, and many samples of it were sent home to the New Zealand Company and others.

1034. Are they working that coal now?—Yes.

1035. Are they working coal in any other part of New Zealand?—Yes, in Auckland. I have just come down now from the Crystal Palace, where there are some samples of coal and other minerals which have recently come from Auckland; but the coal from thence is not a good specimen.

1036. Have they exported any coal from New Zealand?—No, I think not. They may have exported some to California since I left, but that trade has sprung up within the last two years.

1037. What is the character of the coal you speak of?—It is a sort of cannel coal; I am not a sufficient judge myself to give a detailed account of it. Captain Oceason, who was out there in the steam ship "The Inflexible," tried it and reported very favourably upon it. He said it only required to be worked deeper to be a very excellent steam coal. I have here an extract from the "Nelson Examiner," which states, "Coal in abundance has been found near Nelson and elsewhere, tried by Her Majesty's ship 'Inflexible,' and favourably reported on. Several hundred tons have already been used. There is little doubt of the necessity of steam communication between the settlements. The effect of steam would be great in promoting the civilization of the natives, and would increase the revenue by increase of trade, and give general satisfaction and prosperity."

1038. In your profession as commanding a vessel, you can probably speak as to the harbours and roadsteads of New Zealand?—I am acquainted with them all thoroughly; when

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I first went out there it was my first duty to make myself thoroughly acquainted with all the roadsteads and harbours of the whole coast on both islands, and I know it perfectly well without reference to a map.

1039. In a communication between Sydney and Cook's Straits, what course would you suggest as the one which a steamer should take?—The course would be nearly south-east.

1040. Are there any difficulties with respect to the harbours of New Zealand?—None whatever; New Zealand abounds with some of the finest harbours in the world.

1041. Lord *Naas.*] What is the distance between Sydney and Cook's Straits?—It is about 1,300 miles.

1042. *Chairman.*] What is the length of time that a sailing vessel generally takes in her voyage from Sydney to Cook's Straits?—The average passage down to Cook's Straits from Sydney is about three weeks; there have been passages made in five or six days, but the average time is three weeks; going up again to Sydney the average passage is about five weeks; with a steamer the passage might be made regularly in seven days, I should say.

1043. Mr. *Wilson.*] Each way?—Yes; a screw steamer I think would make that passage, as the winds are to be found in those seas, in seven days.

1044. *Chairman.*] You have stated that the average passage is three weeks; are the winds or currents very strong?—The winds are variable; the fact is that the vessels which generally come down from Sydney are very small, and do not afford a fair test; many of them are built by the colonists, without any regard to speed, or even to safety, therefore it is not a fair criterion. Some ships have come down from Sydney in as short a time as six days; one ship made the passage to Nelson in six days.

1045. Mr. *Divett.*] In mentioning three weeks as the length of the voyage from Sydney to New Zealand, you have stated that six weeks is the general length of the voyage from New Zealand to Sydney; do you mean to say that in consequence of the state of the winds the time occupied in the one voyage is double that of the other?—Yes, taking the adverse winds through the year, I have frequently found it to be so.

1046. You state that you know the harbours of New Zealand perfectly; will you tell the Committee whether Auckland is easily approachable from both seas?—It is not, in a direct line from the west.

1047. It is on an isthmus, is not it?—It is; from Sydney

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it is on the eastern side of the isthmus, so that you have to round the north cape. In a direct line it is not approachable. There is a narrow isthmus of six miles which divides the seas. There is a harbour on each side; but the harbour on the western side is unapproachable for ships of any size, on account of its being a bar harbour. Most of the ports on the western coast of New Zealand are bar harbours, but on the eastern side they are all very open and easy of access.

1048. As far as the approach to Auckland goes, the Committee must consider that practically it must always be from the eastern side of the island, and not the western?—It cannot be from the western for large ships.

1049. You stated that there is great difficulty in the communications between the different parts of New Zealand; I suppose that is mainly owing to the difficulty of communicating by land, is not it?—The whole country of New Zealand is decidedly mountainous, and the settlemnts at long distances from each other.

1050. Does not that, in your opinion, make it of great importance that the steam communication with Sydney should not be confined to Cook's Straits, but that it should be more comprehensive?—Yes; but the proposition which I laid before the New Zealand Company was this: I said that three vessels were required for the immediate purposes; one to keep up a communication regularly between Sydney and Cook's Straits, the other two starting from a point in Cook's Straits to be coasters, and never to move off the coast, but to remain doing the coast work. One starting round the north island, the other going to the south down to Canterbury, Otago, and all the settlements on the south-eastern side, including the fisheries, and coming back again; both vessels meeting the regular packet going backwards and forwards once a month to Sydney.

1051. Upon a full consideration of the whole subject, you think that one powerful steamer for the communication with Sydney, and two small steamers for that inland communication, would be more efficient and more useful to New Zealand than any plan by which the steamer coming from Sydney could be made to touch at a greater variety of places?—Much more so. I can give the Committee a few reasons, which will prove that that is the case. These small vessels which I propose for the coasting work might be about 300 tons each; they might not only be the means of carrying letters to various places, but they would pick up any passengers or cargo and bring them to a central port, at which the

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other packet that was running between Sydney and New Zealand would be able to take up the passengers or cargo to be shipped to Sydney or to be brought home, as the case may require.

1052. You would contemplate on the establishment of a means of communication between Sydney and Cook's Straits that two small steamers should make the circuit of the middle and northern islands, and should return with their passengers and cargo to meet the next return packet to Sydney?—Yes, I would arrange that they should just meet in time.

1053. You would contemplate that they should make a circuit of the middle island and the northern island?—Not a circuit of the middle island. The western coast is quite barren of harbours till you get down to the southern part of it, where there is one called Milford Haven, which is a good harbour; but the land is too mountainous to be available for a settlement, therefore all the principal settlements are upon the eastern coast of the middle island. The first settlement you come to from Port Nelson in Cook's Straits is "Canterbury," then to Otago, then to the various settlements between Stewart's Island and the main; lately the Auckland Islands have become fisheries, and my plan also embraced that the vessels should run down to the Auckland Islands; they would have plenty of time to do so, returning to Nelson to coal.

1054. You included in your plan the touching every month at Stewart's Island, and at the Auckland Islands?—Yes.

1055. In reference to the northern island, you contemplated making the circuit of it?—Yes; there are some settlements on the western coast. New Plymouth is on the western coast, which is one of the most important settlements in the country.

1056. Steamers of what power do you contemplate would be required from your knowledge of those seas?—Two vessels of 300 tons, I should say, would be quite sufficient.

1057. Of what horse power should they be?—I think that vessels of that size, with 40 or 50 horse power, would be quite sufficient. I am speaking of screw steamers. I do not think paddle steamers would answer. I think screw steamers would be much better for the whole of that service.

1058. Looking at the nature of the service between Sydney and Cook's Straits, steamers of what size and what power should you propose?—Between 600 and 800 tons.

1059. Of

1059. Of what horse power should they be?—I think 150-horse power.

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1060. Lord *Naas.*] Why do you think screw steamers would be preferable?—On account of their much greater economy, and having more capacity for stowage. Stowage would be very valuable on the coast. A great portion of the service would be upheld by the conveyance of merchandise.

1061. Mr. *Divett.*] How do you conceive that the service on the return voyage from Sydney to Cook's Straits could be carried out by screw steamers in the teeth of those strong winds you speak of?—Those winds are not directly in their teeth; they generally blow from the north-west or the south-west. Those steamers would lie up well with the wind, and make their passage with much more regularity, I believe, than a paddle steamer would do.

1062. You think the wind is not such a directly contrary wind as to interfere with the proper sailing of a screw steamer?—Certainly not; not either way. In nautical phrase, they have a soldier's wind very frequently, *i. e.* on the beam.

1063. Mr. *Wilson.*] Would not those winds suit a sailing vessel?—A sailing vessel cannot lie so close to the wind as a screw steamer, besides which, from all the information I can gather, the latter can make a course with the wind within four points, but no sailing vessel, unless it is very fine weather, can make it under six points; if the weather is bad they probably make an eight-point course; I think in every respect screw steamers are much better adapted to the service than others.

1064. Lord *Naas.*] You are well acquainted with the navigation of all the south-eastern seas, are you not?—Yes; I have been in the whole of those seas.

1065. Have you made the passage round the south coast of Australia by Cape Lewwin?—I have; I have been down to the Mauritius twice, and also through Torres Straits twice.

1066. Can you, shortly, give the Committee a general statement of the relative advantages of those two passages, the one by the north coast through Torres Straits, the other by Cape Lewwin?—If I were left to my own judgment in making the passage, I should prefer the south coast to going through Torres Straits, inasmuch as I consider the Torres Straits passage exceedingly dangerous. On both occasions when I have been through we had very experienced officers. It is the practice in Sydney for ships to wait for each other till they make up a fleet, and then the commander who has

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seen the most service through Torres Straits is chosen as the commodore, and they follow him as nearly as possible, but it frequently happens, nevertheless, that ships get lost. On my first voyage through Torres Straits there were four ships; I think we were in the wake of the four ships, and they all passed a reef quite safely except ourselves. It was about 11 o'clock in the day, everybody was on the look-out, and every vessel cleared the reef but ourselves; we brought up hard and fast upon the reef, which, when I lowered a boat down to examine, I found I could put my arm down and break the coral off; it ran up to a sort of pyramid, with seven fathoms water round its base; we went in on the parallel of 12, I think, and on each side of the passage through the Great Barrier there was a wreck lying; there were one or two others not broken to pieces, but perfectly deserted.

1067. Mr. *Plowden.*] Is not it the fact that you are obliged at a certain period of the day to anchor, because in consequence of the reflection of the sun's rays you cannot see the reef before you?—Yes, after the sun has passed the meridian.

1068. Lord *Naas.*] At what time of the year was that?—It was during the favourable monsoon, *i. e.* south-east, in April; we were six week to Java, year 1849.

1069. Have you ever made the passage through Torres Straits the other way, coming back?—Never; I never heard of a sailor who ever did, or who ever attempted it willingly.

1070. Mr. *Wilson.*] Would the danger be considerably modified by the employment of steamboats?—No; during the winter monsoons the fogs are said to be very thick; the best charts which have ever been made of Torres Straits are faulty. These coral reefs spring up so quickly, that if a chart were completed to-morrow, in a few years afterwards, over the very soundings where that chart showed deep water there might be a coral reef impassable, or even dry above the surface.

1071. *Chairman.*] You have been speaking of the danger to a sailing vessel?—Yes.

1072. In the case of a steamer going at the rate of eight or nine knots an hour, would not the danger be increased?—Yes, in thick weather or when the sun is high.

1073. Mr. *Cowper.*] Suppose there were no fogs, and the coral reefs could be easily discerned by anybody on the look-out, might not a paddle-wheel steamer be so steered as to avoid them?—If the reef could be easily discerned, that might be done; but there is the difficulty I speak of.

1074. Will you state what is the difficulty; cannot a coral

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coral reef be seen through the water, where it rises to such a height as to touch the keel of a vessel?—No; in the instance I gave the Committee, I made that very clear. I have very good eyesight, and am very careful at sea, and I was with other careful officers, all interested in the subject. We were running in the wake of four other vessels. All those vessels passed the danger but ourselves, they being each vigilantly on look out; and yet, though there was a man in the chains on each side keeping regular soundings, we were brought up, and the ship buried to her fore chains in the reef. It was so high that when I lowered a boat down, and went to examine it, I put my arm down, and pulled off a piece of coral.

1075. Was not that coral reef visible at any time?—It might have been visible at some time. I should suppose it was visible, but as soon as the sun attains any altitude it is almost impossible to see them.

1076. Mr. *Divett.*] When the sun is before your course it is impossible to see what dangers you encounter?—It is impossible; all sailors are agreed in that.

1077. Then, in fact, if a steamer were tempted to go at any great rate of speed she could not be safe in that navigation?—She could not.

1078. She would be obliged, for the purposes of common safety, to go at a slow pace?—Very slow, and she could not run in thick weather.

1079. Even in fine weather I understood you to say she could not run fast?—No, not when the sun was before the vessel.

1080. Assuming that she takes what is called the inner passage, for how many nights would she be obliged to anchor?—Every night; when you go the outer passage you have to anchor.

1081. How many nights would a large steamer be obliged to anchor in making the outer passage?—I should say that they would not be less than seven or eight nights hazy weather, four finest.

1082. *Chairman.*] What is the distance of that passage?—I do not at this moment remember. I doubt very much whether a vessel could run more than 12 hours in a day, and there are upwards of 1,500 miles of dangerous navigation.

1083. Lord *Naas.*] You think that no amount of lighting or buoying, or marks, would make that a safe passage for steamers?—I do not think our Government, or any other government, would undertake to keep up lights at present;

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the traffic is not sufficient; but even if it were, I doubt whether it could be efficiently done.

1084. *Chairman.*] You are aware that Captain Blackwood has placed a beacon at a point off the entrance to the Straits?—I have heard so; I have not seen it; one beacon is of very little consequence at a place like that; the only beacons I ever saw, were unfortunate wrecks.

1085. That beacon being once taken hold of, the ships running so near the land, would not it be possible for them, by means of land-marks, to make out their course?—I should think not; I have not been through the inner passage, and cannot speak of it of my own knowledge; I can only speak from what I have heard navigators who have been through say.

1086. Mr. *Divett.*] As far as your knowledge of Torres Straits extends, it is your belief that it would be impossible, with ordinary safety, to carry on a rapid postal communication through them?—I think it impossible to do so; I believe that six months would not pass over without the people of Sydney, finding that the mail had not arrived, would conclude that the wreck of the steam-packet would be found on some of the reefs in the Straits.

1087. Mr. *Cowper.*] What was the number of nights you said a steamer ought to anchor if she took the inner passage?—My impression is that, taking into consideration the danger of the navigation, she would not be less than six or seven nights at anchor; she might be less than that if they were very fortunate in not having thick weather.

1088. Do you mean that a steamer would take six days to pass through that part of Torres Straits in which there are so many coral reefs?—I believe that if it continued thick weather, a vessel would take more probably six months to go through.

1089. Assuming that it were not thick weather, do you still think she would be six days in passing through that portion of Torres Straits in which there are dangers from the coral reefs?—Yes; she would have contrary winds and currents to contend with the whole way during the fine weather months. During the winter months, when the fogs set in, there would be the greatest difficulty in making a passage that way; and during the fine months she would have the currents and the winds against her all the way.

1090. At what speed do you calculate a paddle steamer would go, with the current and the wind against her, in fine weather?—I think she might average four or five knots.

1091. The

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1091. The idea of her remaining at anchor six nights is upon the supposition that she would not go more than four knots an hour?—It is upon the supposition that she would have to anchor one half of her time; if she were to average four knots, she would soon get over the distance; but I do not think a vessel could average anything like four knots, seeing that she would be 12 hours out of the 24 at anchor, and frequently 16.

1092. At what speed do you think a paddle steamer could go?—I should think the average speed would not be more than four or five knots over the ground.

1093. While she was going?—Yes, to the eastward.

1094. If she could go at the rate of eight knots, instead of being six nights detained, she would be detained only three nights?—Of course, if she went at double the speed, she would go over the same distance in half the time; but I doubt the practicability of her being able to run over the distance in a short time against the winds and currents which are to be found there occasionally: the same reasons which would prevent a vessel coming from the eastward towards the west, namely, the sun being vertical, would prevent the other ship going to the eastward also.

1095. Do you mean to say that there are currents in Torres Straits sufficient to stop a paddle steamer?—The winds and currents together; the general course of the current through Torres Straits runs two or three knots an hour, besides strong winds ahead.

1096. Mr. *Divett.*] You are assuming this low average in consequence of the great caution with which a steamer would have to go by the reefs?—Yes; I am sure a sailing vessel would have to act with as great caution as that, and a steamer cannot be navigated with much more safety in a place of that sort than a sailing vessel.

1097. Mr. *Cowper.*] You think there is no greater advantage in avoiding the coral reefs possessed by a steamer than by a sailing vessel?—I admit that a steamer would have considerable advantage over a sailing vessel, because she could avoid them if she could but see them. It sometimes happens that a sailing vessel cannot avoid the danger when they see it; but still the danger exists, and the difficulty of finding those reefs out would be the same to both at all seasons.

1098. Mr. *Wilson.*] Can you state what is the distance of this dangerous part of the passage?—There are about 1,500 miles of danger. I do not mean to say that the danger is increased as you get further from the Great Barrier, but still there

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there is considerable danger all the way through to Booby Island.

1099. Lord *Naas.*] What two points do you take as the commencement and the end of the most dangerous part of the voyage?—Between the commencement of the Great Barrier on the one side, and the neighbourhood of Port Essington on the other; but there are numerous sand banks between the Barrier and Sydney.

1100. Mr. *Cowper.*] With respect to the inner passage, what is the distance over which the danger from the coral reefs which you speak of extends?—I do not know the distance (practically speaking); I know that navigators generally, in speaking of the inner passage, think it more dangerous than the outer; the whole is dangerous and uncertain navigation at best.

1101. *Chairman.*] Are the Committee to understand you to say that the dangers are found between Cape York and Port Essington?—The danger ceases somewhat off Port Essington. I should say that from the Great Barrier to Essington a vessel would have to stop in the way I have mentioned.

1102. Mr. *Wilson.*] What distance is that?—Down to Essington it is about 700 miles; but the danger does not stop there, nor till you get clear of Melville Island; sometimes in clear weather you can run; but vessels, generally speaking, anchor till they get through what they call the Narrows, in the worst part of the Straits.

1103. For 700 miles the danger would actually require a vessel to stop in the way you speak of?—Yes; as a general rule, I think a ship would anchor during that distance.

1104. To accomplish that in seven days you must go about 100 miles a day?—Yes; that would be very fair running indeed.

1105. Lord *Naas.*] As a sailor, you believe it to be, upon the whole, a very dangerous navigation from the commencement of the Barrier Reef to Melville Island?—I do think so; and the opinion of every sailor almost that I have known has been nearly the same; and I have come in contact with many educated and experienced officers.

1106. With regard to the south-west passage, do you believe, upon the whole, that that would be a difficult and dangerous passage in the winter time?—No, I do not; I have been twice to the Mauritius by that route, and also I know many seamen who have navigated it in vessels of not more than 50 or 60 tons; it was a very usual thing eight or ten years ago

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ago to find vessels of as small burden as that making the passage from Sydney, going down to supply the ports on the western coast, King George's Sound, and Swan River, with various necessaries.

1107. What time of the year do you speak of?—At all seasons coasting vessels used to go.

1108. Do you think that the weather off Cape Leeuwin in the winter time is worse than it is usually between this country and America?—It is very much better than it is on the Atlantic at any time; I believe that is the general impression of sailors who have been out in those seas. I would rather make a passage to the west of Australia that way than I would go to America at any season; I have navigated both seas.

1109. You would rather make that passage in a small vessel than you would make a passage to New York?—Yes; rather than to Canada, at all events.

1110. Mr. *Cowper.*] At what time of the year have you been round Cape Leeuwin to the westward?—In the end of August 1837 I left Sydney for the Mauritius, arriving at the Mauritius in the middle of October, making the passage in about six weeks.

1111. You have not been there in the worst time of the year, have you?—That would include July, August, and September, which would be the middle of their winter; each time we made an equal passage; the latter voyage rather less; the distance is about 4,500 miles, and might be made in half the time in a steamer, or about a month at most.

1112. Why is it that sailing vessels do not generally go to the westward from Australia?—I think it is from unfounded fear; I do not think that there is any real danger; many sailors do go round by Torres Straits, because they consider it nearer in going to India; most of the ships going from Australia through Torres Straits are vessels which go out with emigrants from here. After they have landed them it does not always follow that they can get a cargo at Sydney for the return (in which case they will go round Cape Horn); but as they frequently have to go on to India to look for a cargo, they consider the nearest passage to be through Torres Straits when the season is favourable; if not, they go to the westward, round Cape Leeuwin to India, particularly from South Australia.

1113. You think the impression which so generally prevails among persons connected with the navigation of sailing vessels as to the voyage westward from South Australia, is altogether

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altogether a mistaken one?—I think so; most of the men that I have conversed with in Sydney on the subject, as well as in South Australia and other parts, have been persons commanding coasters. In the first place, they have vessels which we should consider very inefficient to do the service; but they do not complain in making the passage to the westward; they keep in shore. The great mistake that navigators make in those seas is, that they stand too far off the land to the southward, by which they get stronger winds from the west. The moment you draw in to the land you find the winds are moderate, and you have land breezes at night; you find that so all over the coast of Australia and New Zealand; these are leading winds either way.

1114. Lord *Naas.*] In the return voyage from Cape Leeuwin to the Cape of Good Hope, would not it be necessary for a sailing vessel or a screw steamer to go considerably to the north; in fact, almost to the latitude of the Mauritius?—Yes; she would run her western down in that parallel, or a little to the south, and would enter the tropic in longitude 112 E.

1115. Mr. *Mangles.*] In speaking of Cook's Straits, you stated that you thought it much more desirable in the case of steamers coming from Panama that they should stop at Cook's Straits than at Auckland?—Yes; I think so by any route; I was not considering the route by Panama; I was speaking of a communication with Sydney when I said so; I should think in any case Cook's Straits is the best and most central part for touching at: first, because it affords a more ready means of communication with other settlements, and also because there is greater commerce there.

1116. Did not you say that the settlements in Cook's Straits are superior in importance to Auckland?—In point of mercantile consideration they are; Wellington we consider to be the first and principal settlement of New Zealand.

1117. Is there much business transacted at Auckland?—There is a good deal of business, but it is not a sound sort of mercantile business which has been carried on there, at least it is not so much so as at Cook's Straits; Auckland has been hitherto supported principally by the Government expenditure there rather than by what we consider fair commerce, though it is improving fast.

1118. Then it is not really the capital of New Zealand, though it is so nominally?—The colonists never speak of Auckland as being the capital of New Zealand; they call it the Government Settlement; that is the distinction which is made.

made. We call the capital of New Zealand, Wellington or Nelson, *i. e.*, in Cook's Straits.

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1119. It is the capital only as it is the seat of government, you think?—I believe all the settlers are agreed about that. I think even the Auckland people themselves, who are the most interested, acknowledge that to be the case; it is not a central situation.

1120. With respect to the coal of New Zealand, do you think it probable that there would be a sufficient supply for the steamers?—Yes; the coal is quite accessible. There are miles and miles of coal fields, where the coal is cropping out from the ocean up into the mountains, in every direction.

1121. That is in the vicinity of Massacre Bay, is it not?—Yes; but recent exploration shows it to abound in other districts.

1122. Supposing the Panama route to be chosen, or to be one of the routes chosen, do you suppose that New Zealand will be able to supply Tahiti with coal?—Yes. They have already sent some coal there, which I understood has fetched a good price.

1123. At what price do you suppose the coal could be delivered at the pit's mouth?—It can be shipped on board the ship at 20 *s.*; probably it may be supplied cheaper now.

1124. Do you apprehend that the coal would be obtained more cheaply as it was more worked, and competition was introduced?—Yes. You have not to sink a shaft to work the coal there, it is cropping up into the mountains from the sea; some of the veins are 10 feet thick.

1125. Then how is it that it costs so much even as 20 *s.*?—The labour is so much more expensive there than it is here; and when I left there was no regular system of working it; it was got by the sailors. The sailors used to go and help themselves. They used to lay the ship ashore, in the bed of the river; and when it was low water, they used to dig up the coals, and fill the vessel, and start off the next tide.

1126. With a greater demand, you think the coal would be considerably cheaper?—Yes, I should think so; when properly worked, I think it could be very well shipped at 15 *s.*

1127. What would be about the freight to Tahiti?—It would be moderate, I should say; I cannot say what it is at present; it would entirely depend upon the amount of shipping which might be out there; generally speaking, the small vessels are pretty well employed, and unless there were large hulking vessels to take down a quantity at a time, it would be expensive freight.

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1128. Mr. *Willcox.*] If there were an increased demand, would not that rather tend to increase the cost, the cost being principally the labour?—I think not; the demand is so insignificant now, that you can only get a few people to go and work it; but were it worked systematically by persons who understood such things, I believe it could be worked at a much cheaper rate.

1129. Mr. *Divett.*] Then your opinions in favour of a communication with Cook's Straits from the west would apply equally to a communication with them from Panama and the east?—Quite so; Cook's Straits, as I think a glance at the map will show, is the most central part, and that which would give the greatest amount of communication.

1130. Admiral *Bowles.*] I collect from your evidence that you consider the Torres Straits passage, either for a screw vessel or a steam vessel, to be employed as a packet, and to proceed rapidly, is out of the question, in consequence of the greatness of the danger?—Yes; my impression is that it is a navigation which would be found so dangerous that it would very soon be entirely deserted, and some other route chosen, namely, the one by the south side I suppose.

1131. Do you think that there are any real practical and insurmountable objections to the return of a screw vessel from Australia by way of the Cape of Good Hope?—I see none whatever; if you can get down from the Mauritius, as I have done twice to the westward, without any obstruction, in a common sailing ship, not much of a clipper either, I can very well understand that a steamer, whether a screw or a paddle-wheel steamer, would make the passage in perhaps half the time.

1132. You think that the resources of New Zealand are increasing so fast now, that in all probability they would be able to establish branch steamers there if a main line were adopted by the Government?—I do; I think they would immediately raise a fund among themselves to give as bonuses to some company who were spirited enough to carry it out efficiently.

1133. What would be the place at which you would recommend that a steamer proceeding from England by the way of the Cape should stop, as a central point?—I should suppose, Sydney. I have not fully considered that subject, but Sydney appears to be the capital of New Holland at present, and the place where the greatest amount of commerce is to be found.

1134. Other ports of importance, Adelaide, and Port Phillip,

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Phillip, and Van Diemen's Land would have their branch steamers?—Yes, unless the Company undertaking to carry out the service were to do it for them; and to comprehend it in the service, they would in all probability have branch steamers running there.

1135. Australia, you think, now possesses sufficient resources to support branch steamers?—Yes, I think so.

1136. In fact you believe they would do it?—They would. I have been from Sydney to Adelaide by steam already, in a fine vessel belonging to Messrs. Boyd, a paddle steamer.

1137. Lord *Naas.*] Do you, from your knowledge, think that the colonists of New Zealand would prefer a communication with England coming from the west or from the east?—I think they would prefer a communication coming from the west, for many reasons. I think they would prefer its coming from the west, because ships would be able to take out a great number of passengers who could not afford to pay the expense of the overland conveyance. That is why I think the Cape route is far preferable in that respect either to the route by Suez or Panama.

1138. And you think the colonists of New Zealand are generally of that opinion?—Yes, and a great many in New Holland also. I conversed with a great many merchants when I was there, and they seemed to think that the greatest amount of traffic would come by the Cape of Good Hope.

1139. Mr. *Wilson.*] Have you had any experience in the trade between India and Australia?—I have been between India and Australia. I have been from Australia to India by the Torres Straits twice.

1140. Have you been the other route?—No, I never have to India, but to the Mauritius I have.

1141. Mr. *Berkeley.*] In the event of the expense of the overland route being lowered by competition, do you not think that passengers would prefer that route?—If I were to speak from my own feelings on the subject, I should certainly prefer a sea voyage at any time to the trouble of transhipping my goods into three or four vessels; but the inconvenience is particularly felt where ladies are concerned; they find the difficulty and inconvenience of that transhipment to be very great.

1142. Probably, as a seaman, you have some little predilection for going by sea?—It may be so. I have never made the Indian voyage myself, but many of my friends have,

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have, and they have spoken of the inconvenience of the transhipment as being very great and fatiguing.

1143. Do not you consider that first-class passengers generally prefer to travel a part of the distance upon land to going the whole way by sea?—Not to Australia, I think. And there is another consideration: they would have to pass through about 4,000 miles of tropical climate in going to Australia, which is not very agreeable, besides all the trouble of the transhipment. It must be remembered that the class of people who go to Australia are not among the most wealthy, but they are parties who take out some little means with them, and wish to economise them as much as possible.

1144. Lord *Naas.*] You believe that any line which renders transhipment necessary would not be chosen by the poorer or middle classes of emigrants?—I cannot see how they could be carried by it so cheaply as they are now carried. Even the middle class of colonists, which are the most important class after all, would be entirely precluded from going; I refer to the class of passengers who go out by the Canterbury ships, who are people of education and respectability, and of some property too.

1145. Mr. *Wilson.*] You are speaking altogether with regard to a direct passage between England and Australia?—Yes.

1146. Suppose you take into account the intermediate communication between Australia and other countries besides England, which would you suppose then to be the most important route?—I should think then that the route by India would be, because you touch many places of importance on the way; at present we have very little commerce in the Pacific, but there is little doubt but steam communication would rapidly create one.

1147. You have a very rapidly increasing commerce with India and China, have you not?—We have very little commerce of that kind at New Zealand; with the Australian colonies it is daily increasing. I believe in either case a communication from India to Australia is almost necessary.

1148. You deem it to be indispensable for the purposes of the trade which is to be found there?—Yes; and then I believe a great number of persons would come down from India to Australia and New Zealand, in preference to coming home to England. Officers and others on leave would avail themselves of the opportunity of going by steam who do no go now; many would recruit in those colonies, or finally settle.

1149. Sir

1149. Sir *J. Hogg.*] Do you think that the connexion between England and Australia, and the connexion between India and Australia are two separate and distinct questions, or do you think that they ought to be attempted to be combined?—I think they are two distinct and separate questions.

1150. *Chairman.*] That they ought to be dealt with separately?—Yes.

1151. And that the Government ought not to attempt to combine them?—Yes; I think the greatest amount of good could be done to those colonies by keeping the communications separate and distinct.

1152. Sir *J. Hogg.*] Do you think the trade and commerce of Australia and New Zealand, with the mother country, and with India, are now of such an extent, and increasing to such a degree, as to render both communications practicable?—Yes, I do; quite necessary to their welfare; and I think also that we should not have a regular communication by steam established there for three years, before the traffic would be nearly doubled; such is the advantage to be derived from steam communication to those colonies. I remember, 12 years ago, in Sydney, there was scarcely a steamer to be seen; but when I returned to it, after a considerable absence, I found that every hour, almost, there were steamers running out of Sydney harbour along the coast, and doing all the coast work there; and the fact of there being a communication along the coast has caused the farmers, who used to bring their produce down at a very expensive rate, through the country on waggons, to take it now to the nearest sea-coast, and bring it up in that way; and towns are springing up along the whole coast of Australia in consequence that would never have been formed but for the facility of steam intercourse.

1153. Mr. *Cowper.*] If the Government were only to establish one line of steam communication between Sydney and England, do you think it would be most for the general advantage of New Zealand and the other colonies in Australasia, that that communication should be by India or not?—I think if there were but one only, it would be more important to the Australian and New Zealand colonists that it should be direct.

1154. *Chairman.*] By the Cape?—Yes, that is my own impression.

1155. Mr. *Cowper.*] You do not think the advantages of a communication between India and Australia are of such

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importance as to render it desirable that it should pass by India?—No; I do not think it would counterbalance the advantages which would accrue from a direct communication by sea, on account of the number of persons who would avail themselves of steam communication who could not do so had they to go overland. The wealth of our colonies depend on the number of colonists.

1156. I presume you look to the chief communication as being by the Cape?—I do, and for commercial purposes also.

1157. Mr. *Wilson.*] What do you mean by commercial purposes?—I speak of the conveyance of goods; the cost of the transhipment of goods must always be a heavy drawback to their being conveyed by steam.

1158. You do not contemplate any large quantity of goods being sent by a steamer, do you?—Yes, a large portion of the choice goods. Since I have been in England I have paid some attention to the subject; I have been among merchants in different parts of the country connected with the Australian colonies (with memorials for them to sign, upon the subject), and they all say that if they could get their choice goods sent out by a steamer at a cheap rate, it would certainly be a great advantage, both to themselves and to the colony also. Colonists are great consumers of British manufactures.

1159. That would be confined to the more valuable description of manufactures, would not it?—Yes, the more valuable descriptions no doubt; the more bulky kind would go out in sailing vessels as heretofore. Steam would increase their work, not diminish it.

1160. Have you any connexion with either of these companies?—None whatever; since I have been in England I have advocated the Cape route as a matter of experience and principle, and indeed some letters which appear in my book will show that I have done so; it has been from a feeling that it is really the most important route for Australia and New Zealand that I have done so.

1161. As a postal route, to which would you give the preference?—As a mere question of postal conveyance the voyage may be performed in the one way as well as in the other.

1162. As a postal route would not the Indian route be superior to the other, inasmuch as it would include a large portion of the postal service which the other would not?—The greater amount of postal communication between the Australian

Australian colonies and England is all direct, and exclusive of India.

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1163. I am not speaking of the direct communication between England and Australia, but of the intercolonial communication between Australia and India; would not the Indian route answer the purposes of postal communication with Australia equally as well as the Cape route?—Yes, as a mere postal communication it might.

1164. If, in addition to that, by the Indian communication you include a postal service to India, Singapore, China, and all that part of the world with which Australia has extensive communication, would not that be an advantage which the other route would not possess?—Yes, if the letters of all those countries could be forwarded to Australia in a given time, it certainly would.

1165. By the same communication?—Yes, it would be an advantage as a mere question of postal conveyance certainly.

1166. Therefore the Indian route presents advantages connected with the postal service which the other does not?—I think it does as a mere question of postal service; but for goods and passengers it certainly does not, even looking at it in the most favourable light possible.

1167. Admiral *Bowles.*] What would be the difference in the time of the arrival of letters between the two routes?—I believe that in four cases out of six the voyage would be performed more quickly by the Cape of Good Hope than by any other.

1168. *Chairman.*] In returning as well as in going out?—Yes; I consider the advantages equal in returning and going out; there is no practical impediment whatever.

1169. Mr. *Divett.*] Have you given your attention to the different course which a screw steamer would take in returning from the course which she would take in going out?—Yes; I have not my notes of the distance, but of the latitudes, and so on, I have. From my own experience, having made the voyage myself that way, I believe the passages are quite equal. All the logs of the Indian ships go to prove that the voyage homeward is made as well round the Cape as the voyage outwards, and that an average of eight knots can be obtained.

1170. In making the voyage home, would not the vessel be obliged to go further north than she would go to the south in her way out?—But trifling; she may be sure of a run down on the edge of the trades to the Mauritius. When

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a ship gets down to the Mauritius in coming from India, we consider her voyage is made; there is a strong current running round the Cape of Good Hope which sets her 100 miles dead to windward in 24 hours, even against a westerly gale, sometimes.

1171. You have full confidence that there would be no great difference in the home voyage and the out voyage by a screw steamer from the Australian colonies?—I do not believe that it would make a day or an hour difference.

1172. Mr. *Wilson.*] If the course be so good from Australia to the Cape homewards, can you tell us why it is that ships always prefer going round Cape Horn?—It is prejudice, I think, more than anything else. If they knew as much about it as the coasters do on the coast of the country, who keep in shore, and make their passage to the westward that way, they would prefer it, and I think they will prefer it when the example is set by steamers.

1173. Is there any tendency to an alteration of the present system?—With many ships there is; 10 or 12 years ago no one ever thought of doing so. One captain asked another whether he thought it a good passage. I believe some of the early navigators have written that it was a difficult passage, and they have just taken it on the authority of those men rather than upon any practical experience of their own.

1174. Is there any difference in the rate of insurance?—I never heard of any.

1175. Mr. *Plowden.*] Do not vessels prefer the Cape Horn passage on account of its being a shorter passage than that round the Cape of Good Hope?—No, as the westerly winds prevail. They catch the westerly winds immediately they leave the port, and they go away with a flowing sheet at once, and run down past New Zealand; but the passage is a dreary one at all seasons, and dangerous on account of ice.

Mr. *William James Page*, called in; and Examined.

Mr. *W. J. Page.*

1176. *Chairman.*] WHAT office do you fill in the General Post Office?—I am a Clerk in the Secretary's Office at the General Post Office.

1177. Are you acquainted with the present postal communications with Australia?—The correspondence of the Post Office on such subjects with the Treasury and the Admiralty passes generally through my hands. In that way I am acquainted with the correspondence which has taken place.

1178. Have you any mode of arriving at the different amounts

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amounts which are received by the Imperial Exchequer from the different colonies?—No; the accounts which are kept at the Post Office do not enable us to state the amount of postage derived from correspondence, except on certain occasions when we are ordered to keep an account specially for the purpose.

1179. Are you aware of a return to the House of Commons which was moved for by Lord Seymour?—Yes; I have seen that return.

1180. Do you believe that return to be correct?—I believe it to be incorrect as printed. Whether it was incorrectly made out in manuscript I am not prepared to say, not having seen the manuscript copy; this certainly states what is not the fact.

1181. You see what is stated to be the amount received from the Australian colonies?—Yes, 55,321 *l.* 12 *s.* 4 *d.*

1182. Do you believe that to be correct?—I know it to be incorrect.

1183. Have you any statements showing the amount actually received in the year for which that return is made out?—I have a copy of an estimate which was made out for the year 1847, showing the postage during that year to have been 15,149 *l.* 11 *s.*

1184. There is an error, therefore, in the return to Parliament of 35,000 *l.*?—I can explain how this occurs. It is in consequence of the introduction of this word "Sydney" into the printing in some wrong place. This item, 48,593 *l.* 6 *s.* 4 *d.* is the whole postage derived from ship letters during the year to and from all parts of the world. How the word "Sydney" got into that line I have not the least idea.

1185. Mr. *Bright.*] What is the date of that return?—It was ordered to be printed in August 1848.

1186. Can you point out any other error in the same return?—I am not aware of any other error. My attention has been called to this within the last month.

1187. Mr. *Cowper.*]—If the word "Sydney" had been in its proper place, what would the return have shown to be the amount from Sydney?—By packet from Sydney, 5,743 *l.* 6 *s.* 8 *d.* The letters by ship from Sydney would be included in this item of 48,593 *l.* 6 *s.* 4 *d.*, not being distinguished.

1188. *Chairman.*] Have you any return distinguishing the amount of revenue derived from the different colonies of Australia?—I have only arrived at it from one or two estimates which have been before me.

1189. On what are those estimates founded?—They are

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founded on an actual account taken for three months; the estimate I hold in my hand is for six months ending the 5th of October 1848. It was called for by the Chancellor of the Exchequer, I think, on some occasion, and was made out as he called for it. It distinguishes the postage of letters conveyed to and from the different colonies by private ships, but all that were conveyed by the packet are embraced in one item, because they all reached the Post-office or were sent from the Post-office between London and Sydney, the packet only having gone to Sydney. The number of letters sent to Sydney was 3,065; the postage was 133 *l.* 19 *s.* 2 *d.* The number of letters sent to Port Phillip was 6,068; the postage was 263 *l.* 12 *s.* 6 *d.* The number of letters sent to Van Diemen's Land was 8,998; the postage amounted to 543 *l.* 17 *s.* 7 *d.* To South Australia the number sent was 4,520; the postage amounted to 205 *l.* 7 *s.* 7 *d.* To Western Australia the number was 582; and the postage was 114 *l.* 6 *s.* 1 *d.* To New Zealand the number was 1,078; the postage amounting to 62 *l.* 16 *s.* 9 *d.* The total number of letters sent in the six months was 24,311, and the total postage 1,323 *l.* 19 *s.* 8 *d.* The number of letters received from Sydney was 12,973; the postage being 694 *l.* 18 *s.* The number received from Port Phillip was 14,263; the postage being 742 *l.* 16 *s.* 8 *d.* From Van Diemen's Land 15,014; the postage being 1,206 *l.* 16 *s.* 10 *d.* From South Australia 8,891; the postage being 815 *l.* 14 *s.* 6 *d.* From Western Australia 675; the postage being 58 *l.* 14 *s.* 8 *d.* From New Zealand 2,231; the postage being 132 *l.* 6 *s.* 8 *d.* The total number of letters received in the six months was 54,047; the total postage being 3,651 *l.* 7 *s.* 4 *d.* By packet to all those places there were sent 19,698; the postage amounting to 1,573 *l.* 3 *s.* The total number of letters received was 19,056; the postage being 2,079 *l.*

1190. Have you any return showing the amount received for newspapers?—No, it does not distinguish them. The postage on newspapers by private ships is included in that account. By packet the newspapers were sent free, as they are to all the British colonies.

1191. For what year is that return?—For six months ending the 5th October 1848.

1192. What was the total amount?—Both by packet and private ship the amount was 8,627 *l.* 10 *s.* for the six months.

1193. Is that exclusive of the postage received by the overland route?—Letters received or sent by the overland route could not be distinguished from letters included in the Indian

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Indian mail, I suppose. Those are letters coming by the sealed mails made up for or in Sydney.

1194. Have you any reason to believe that a large proportion of letters from Australia come home in bags, carried on board ships to evade the postage?—They do not come home in that way. A large number go out in bags made up in the broker's office. It is permitted, in fact.

1195. Then probably only a small portion of the communications pass through the Post-office?—While we only sent out during those six months 24,000 letters, we received 54,000 letters, proving that we receive twice as many letters through the Post-office as we send to those places.

1196. Mr. *Currie.*] Is that practice permitted?—The public are permitted to send out letters by private ship without their passing through the Post-office. If they go by packet, they must pass through the Post-office, but not if they go by private ships. The only prohibition is against parties collecting letters; that is not allowed.

1197. Mr. *Bright.*] They frequently make up bags at the brokers' offices, do they not?—Yes; the brokers profess not to collect them; but there is a bag in their offices, and people drop them in themselves, or they put one up in the vessel.

1198. *Chairman.*] Can you state the amount of postage received from the Canadian Provinces?—I am not prepared to state it; we could furnish a tolerably correct estimate of the amount.

1199. For the last 10 years?—Ever since the Cunard steamers were established.

1200. Do you think there has been a great increase in the amount of postage consequent upon the establishment of steam communication with Canada?—I am aware, from the returns which have passed through my hands, that the postage upon letters between England and the American colonies has increased immensely.

1201. Do you think that the increase was immediate upon the establishment of steam?—In setting up packets we should at once bring into the Post-office all the letters. The moment we put on packets to America, they being steamers, we carried the letters because they went quicker, and we also carried them because the parties could not send by our conveyance otherwise than through the Post-office.

1202. Have you any idea what the increase was?—No; I do not think we could furnish any returns showing what the postage was before the establishment of steamers; the greater

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part of the letters to Canada went through the States at that time.

1203. Mr. *Bright.*] Do you remember that when the mail steamers were established from Liverpool to New York, the ordinary line of packet ships ceased to carry letters?—To a great extent that was the case.

1204. On account of the greater speed of the steamers?—Yes.

1205. The Post-office did not interfere with the liberty of the public to send letters by packet ships?—No, but about the same time the Cunard packets were set up the postage to America was considerably reduced; it was reduced from 2*s.* 2*d.* to 1*s.*

1206. What is the amount paid upon letters to Australia?—A ship-letter to or from any part of the world pays 8*d.*

1207. During the time of the establishment of the packet at Sydney, do you think there were more letters which paid postage than there have been since?—I do not think I am able to say; I do not believe we have had any returns taken since the packet ceased running, and I do not know of any returns previously to the packet being established.

1208. You think it is impossible to arrive at any correct information as to the amount of letters which go *viâ* the overland communication?—I think so, except by ordering a return to be kept; it could be kept for two months or three months, if the Committee choose to order it; that is the only way in which we are able to take any accounts in the Post-office, excepting the accounts between us and our agents: the letters are delivered so soon after the arrival of the mail in London, and sent off so soon after they are collected, that we have very little time for obtaining returns.

1209. Can you speak as to the effect of the establishment of steam communication between India and this country?—I am not able to say.

1210. Have you any returns which you wish to put in?—I have brought three separate returns, showing the postage derived from Australian correspondence, which we have taken for three following years, each being taken in the same way; one for the year 1846, showing that the postage during that year had been 14,799*l.* 14*s.* 4*d.*; one for the year 1847, showing that it had been 15,149*l.* 11*s.*; and this return, which I have just read, shows that for the year 1848 it was 17,255*l.*: those are the only three accounts which have been taken which I can furnish to the Committee. (*The Witness delivered in the same.*) With respect to the Mauritius, I find, from

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from an account which was kept for six months in the year ending the 5th of October 1848, that the number of letters sent to the Mauritius by private ship during that period of six months was 4,084, the amount of postage being 326*l.* 12*s.* 10*d.* The number of letters received from the Mauritius by private ship during the same period was 7,885, the postage being 584*l.* 9*s.* 6*d.*, which would give a total postage for the year of 1,822*l.* 4*s.* 8*d.*

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Mr. *Charles Logan,* called in; and Examined.

1211. *Chairman.*] YOU have considerable acquaintance with the colonies of Australia and New South Wales, more especially, have not you?—Yes, I have resided there for many years.

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1212. Has your attention been turned to the subject to which the inquiries of this Committee are directed, connected with steam communication between the colonies and this country?—It has been long and anxiously directed to that subject, both in Australia and since my arrival in this country.

1213. Can you state the views of the colonies as to which route of those which have been before the public they would prefer?—The favourite route, when I left New South Wales, was that which was considered to be the most speedily practicable; the route by way of Singapore, in continuation of the overland and Indian route.

1214. Is it as a postal line they would prefer that route, or as a line for general communication?—The anxiety of the colonists had special reference to that line as one for postal communication.

1215. Have you considered the Cape route?—I have.

1216. How far do you think the Cape route, as put forward by the Screw Company, would meet the views of the colonists?—I think that the Cape line combines many more advantages than are possessed by the other two competing lines; namely, the Indian line and the Panama line.

1217. Do not you consider that a line which combines both the object of commerce and that of postal communication has the preference over that line which can only be made use of for postal communication?—As far as the immediate object of the colonists is concerned, the line which would perform the postal communication most quickly is the one which would be most acceptable; but for all useful purposes, that

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that which combined commercial and postal advantages would be preferred.

1218. Do you think that the most rapid communication is that by Singapore?—I cannot arrive at a conviction upon the subject, as it is yet a matter of experiment.

1219. If it could be proved that the communication by the Cape of Good Hope would be equally rapid with that *viâ* Singapore, what would be your opinion?—I should then consider the Cape route to be the most advantageous, if it combined the quickest postal communication with accommodation for mercantile operations.

1220. What reason have you for thinking that the communication by the Cape may not be as rapid as that *viâ* Singapore?—It appeared to be the prevailing opinion at Sydney, from the expedition which had been exerted as far as Singapore by the steamers now trading there belonging to the Peninsular and Oriental Company.

1221. Do not you believe that the views of the colonists of South Australia are favourable to the line *viâ* the Cape?—I know it as a matter of official fact that they are.

1222. They have voted a certain sum of money to carry out that object, have they not?—They voted 3,000 *l.* with reference to a communication by means of screw steamers by way of the Cape of Good Hope.

1223. Do you know what has been voted by Sydney?—Six thousand pounds a year.

1224. For what communication?—For the Singapore line especially.

1225. Can you give any information to the Committee as to the dry dock which has been established at Sydney?—Yes; it was designed as an encouragement to vessels of Her Majesty's service to resort to Sydney, as it was the object of the Government and the inhabitants to render it a naval rendezvous; it is in course of construction for the accommodation of 74-gun ships, or steamers of a large class. I am informed by a competent naval authority, to whom I have shown the proposed dimensions of the dock, that it will receive a steamer as large as the "Terrible." There are also to be procured at Sydney all the appliances and supplies that may be necessary for dockyard purposes.

1226. Are you aware what conveniences there are in the other colonies of South Australia for vessels of a large tonnage?—There are no conveniences existing that I know of. At Sydney, I may mention, they have long had a patent slip. At Port Phillip they have no such thing. At Adelaide, I am informed,

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informed, a patent slip is about being constructed; and at Van Diemen's Land there was a patent slip, but I believe it no longer exists.

1227. Vessels having to careen would have to go to Sydney?—They would, more particularly if they were large steamers.

1228. Has your attention been turned to the trade between New Zealand and Australia?—Yes.

1229. Are you aware to what extent that trade exists?—It is daily increasing; it has more particularly increased within the last three or four years, dating from the period of the Mauri insurrection.

1230. Between what points?—Principally between Sydney and Wellington; there is a slight trade with Port Phillip; but a greater trade than that exists between New Zealand and Van Diemen's Land.

1231. Do you think that that trade is likely to increase?—I think so, as emigration and population increases.

1232. What is the character of that trade?—From Sydney it consists of live stock and general merchandise. Articles of personal clothing and provisions, and sometimes coals. The returns are cowrie, pine, and other timber.

1233. What points do you consider would be the most advantageous to the colonists for a communication between New Zealand and Australia?—I should say that Sydney would be the most desirable point; and, on the other hand, Wellington, in New Zealand.

1234. That is in Cook's Straits?—Yes.

1235. You have heard the evidence which has been given by a former witness in reference to Cook's Straits, and the direction in which he would enter Cook's Straits?—Yes.

1236. Do you concur with him in what he has said?—I am incapable of forming an opinion upon nautical matters, with which I do not profess to be acquainted.

1237. Can you state what the population of New Zealand is?—I cannot.

1238. Lord *Naas.*] Do you know what the opinion of the New Zealanders is in regard to the line of communication which should be adopted?—I have no personal knowledge on the subject.

1239. You cannot tell which line they would prefer?—When I left Sydney I believe that the New Zealanders were looking for the same objects which the inhabitants of Sydney were, that is, the quickest means of communication without reference to the route.

1240. You

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1240. You cannot tell whether they would prefer the line from the East or the West?—No; but I do not think there was any expression of opinion on the subject.

1241. *Chairman.*] In case of any arrangement being carried out for the purpose of giving steam communication to Australia, how would you propose to effect it; would you take a particular point in New South Wales, and send off branch steamers to the different colonies, or supposing the vessel took the western passage, would you propose that that being the main trunk line, the same steamer should go on to the different colonies?—I should rather detach branch steamers under some combined arrangement.

1242. Are there means for doing that at present at New South Wales; are there any considerable number of steamers there?—There are a number of steamers fully employed already, but more might be available.

1243. Are any of those steamers built at Sydney?—Yes.

1244. Are their engines fitted there?—Yes; we have excellent engineers.

1245. Have you any other information which you would wish to give the Committee, which you think would be useful to them in their inquiry?—No; but I was anxious, if it were not obtrusive, to state the feeling which I know to have existed in the Australian colonies, and which was underrated by a previous witness. It was stated in my hearing, the other day, that much interest had not been exhibited in Sydney upon this question, whereas within my own knowledge public meetings were held upon the subject, Petitions addressed to Her Majesty and both Houses of Parliament were sent home, and I have been personally cognizant of the intense anxiety felt by all classes for its promotion. It is an all-absorbing question, in fact, in the colonies; for it is not only one connected with the mercantile interest, but it is associated also with the affections, inasmuch as people are most anxious for the quickest possible means of communication with their relatives at home.

1246. Do you believe that where the Council concurred in voting 6,000 *l.* for the purpose of establishing steam communication, they had before them fully the proposals which have since come before the public as to the Cape of Good Hope line?—They had proposals before them, but not in a definite shape.

1247. But not as regards the Panama line?—No; at that time it would have been considered Utopian, and even now it must be the farthest from accomplishment.

1248. What

1248. What is your own view of that line?—My own view of that line is, that if it were the most expeditious, it would be the best; but it is certainly less advantageous than the Cape, because you have all the evils and inconveniences of transhipment unless you have a ship canal. Mr. *C. Logan.* 29 April 1851.

1249. Admiral *Bowles.*] Are you aware that the East India Company offered to aid the branch from Singapore to Australia?—I think I saw it stated in some Parliamentary papers; I am not otherwise aware of the fact.

1250. Is it your opinion that steam vessels proceeding from England by the Cape of Good Hope to Australia would afford a great advantage to the colonies, by carrying out passengers and also goods at a cheaper rate than it would be possible for them to be conveyed by the Isthmus of Panama or by the overland Indian route?—Yes, decidedly; as an emigration route it would be also of great advantage, if a low rate of passage were combined with expedition.

1251. Are you aware of the difference in point of time between the two communications?—No, I have not entered into any calculation on the subject.

Veneris, 2° die Maii, 1851.

MEMBERS PRESENT.

Mr. Divett.	Mr. Henry Currie.
Mr. Willcox.	Mr. Cowper.
Mr. Stanley.	Admiral Bowles.
Lord Naas.	Mr. Plowden.
Mr. Mangles.	Mr. Henry Berkeley.

VISCOUNT JOCELYN, IN THE CHAIR.

Captain *Francis Price Blackwood,* R. N., called in; and Examined.

1252. *Chairman.*] YOU hold the commission of a Captain in Her Majesty's service?—I do. Capt. *F. P. Blackwood,* R. N.

1253. In what years were you engaged in the survey of the north-east coast of New Holland?—From 1842 to 1845.

1254. Were you so engaged at all periods of the year?—Yes.

1255. Will

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1255. Will you state shortly to the Committee the instructions which you received from the Admiralty in regard to your duties on such survey?—I was chiefly directed to examine the great outer Barrier Reef, which had never before been examined, and to fix upon the best position there to build a beacon or a tower, for the purpose of leading ships safely from the outer barrier into Torres Straits. That was the main part of my instructions. When that was completed, I was directed to examine the northern part of Torres Straits and New Guinea as much as I could. That employed me for three years.

1256. Will you point out to the Committee on the chart the points between which your survey was carried out under those directions, both as respects the inner and the outer passage?—I commenced my survey at the southern end of Breaksea Spit, and carried on the survey of the outer barrier for about 400 miles. I then went to the northern part, and commenced at Lizard Island; I examined the whole of the northern barrier reef up to its extremity, selecting Raine's Island as decidedly the best spot to fix a beacon on, according to my orders. I then returned to Sydney, and obtained from the Governor a party of prisoners; I landed 50 men upon this islet, and there built a beacon tower of solid quarried stone, with a 5 feet wall and 30 feet in diameter, visible 12 miles from the deck of a ship steering through the Straits.

1257. Twelve miles each way?—Yes, all round. We then thoroughly examined the passage from Raine's Island to Torres Straits and Endeavour Strait, so that we completed the channel from Raine's Island to the western part of Endeavour Strait, by which means a ship runs through from Raine's Island to Endeavour Strait in 36 or 48 hours; that was the second year. In the third year, I returned with the westerly monsoon, which had then been considered impracticable, and passed into Torres Straits, when we examined Torres Straits and the islands, and a certain portion of New Guinea. That completed the whole of our labours there.

1258. What was the length of survey of each of those passages?—The distance from Raine's Island to the western extreme of Endeavour Strait, which is the only intricate part taking the outer route, would, I conceive, be about 200 miles, a little more or a little less perhaps; a ship need only anchor once in going from Raine's Island to Endeavour Strait.

1259. Do you consider the survey which has been made under

under your directions, followed up as it has been by those effected by Captain Stanley and Lieutenant Yule, as complete and sufficient to guide a vessel under all circumstances through the difficult navigation of the straits and along the neighbouring coast?—I do, most certainly.

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1260. In the case of a vessel running north to make the western passage through Torres Straits, at what point should you say the dangers of the navigation commence?—The dangers commence if you take the outer route, at Raine's Island; if you take the inner route, the dangers commence at the southward of Breaksea Spit.

1261. When should you consider a vessel to be clear of all such risk when running on for Singapore?—When she was clear of Booby Island, the western extremity of Endeavour Strait.

1262. What length of time do you consider a steamer, such as those employed in foreign service, would take in making this passage which you call intricate; take first the inner passage, and secondly, the outer passage?—I should conceive that a good steamer, in running from east to west, in the height of the monsoon, would not much beat a sailing vessel the wind being fair; but going back against the monsoon, the steamer would have greatly the advantage.

1263. Are you speaking of the outer passage or the inner passage?—I chiefly allude to the outer passage, as being that in which a good sailing ship ought to vie with a steamer. Both steam ships and sailing ships must anchor taking the inner route. The outer passage is what is called coming in by Raine's Island; by the inner route, you enter at Breaksea Spit.

1264. Which of the two passages would you recommend as best adopted for general communication?—In going from Sydney, I should recommend the outer passage unquestionably.

1265. At all seasons of the year?—At all seasons of the year in going from Sydney to India.

1266. Do you consider that there would be equal safety for vessels pursuing the same passage coming to the southward from the westward?—No; I consider a steam-ship should take the inner route certainly, for she would find smooth water, and be enabled to anchor, whereas in the outer route, she would meet a heavy sea, and there are a great many patches which might stop her perhaps.

1267. Will you state to the Committee the character of the dangers of the navigation in question?—It is a coral or

"coralline"

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"coralline" sea; there are coral sunken patches, and coral dangers, which dangers are not entirely to be discovered by a masthead look-out, nor by the lead; the lead gives you no notice of your approach to the dangers.

1268. What is the mode adopted to keep clear of those dangers where the navigation is intricate?—A masthead look-out solely.

1269. Has not the glitter of the sun, when it attains a certain altitude, a dazzling effect upon the water, which prevents the reefs from being clearly distinguished?—It has.

1270. Is not there a portion of each day when such will be the case?—Yes.

1271. You recommend the inner passage under certain circumstances as the one which ought to be adopted, and you admit the intricacy of the navigation: how do you, as a seaman, recommend that a vessel should direct her course so as to keep clear of those dangers?—The inside channel has been thoroughly surveyed. There have been two complete surveys of it; the first by Captain King, and more recently by Captain Stanley, who has re-surveyed it and found no new dangers. He has surveyed it in the most complete manner with his boats, and no additions have been made to Captain King's charts.

1272. At what distance from the shore would a vessel stand on the average, going by the inner passage?—Her safety would be in keeping close along the shore, within four or five miles.

1273. Are the landmarks sufficiently bold and prominent for a vessel under all circumstances to depend on as a guide?—Yes.

1274. Do not you consider a beacon absolutely necessary to ensure safety as a point of direction?—Absolutely necessary for the outer passage.

1275. At what point did you establish it?—At Raine's Island, in latitude 11 deg. 36 min. south.

1276. Do you consider that that beacon, when once made, is a sufficient guide for the future calculations of the voyage?—I consider it so completely sufficient that the year before last 36 ships went through the outer route and not one was wrecked.

1277. Is not it necessary for further security that astronomical observations of longitude and latitude should be taken daily?—In the case of a ship navigating through, certainly.

1278. Have not you experienced in those seas days when the

the cloudy state of the sky and the haze of the atmosphere has precluded any observation from being taken?—Very rarely. It is a clear climate.

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1279. Have you ever experienced such occasions?—No. I do not remember any instance of my being stopped for want of an observation.

1280. If, however, no observations were taken, do not you consider that there would be great danger, the beacon not being made, and the state of the atmosphere preventing any observation being taken in the neighbourhood of those shoals and reefs?—Undoubtedly; great danger.

1281. In thick and hazy weather could a steamer make the passage: would not she be obliged to anchor?—She would be obliged to anchor.

1282. Is there safe anchorage ground in the neighbourhood of the Straits and through the difficult part of the navigation?—Everywhere in the inner passage.

1283. The Committee have had it in evidence that no vessel could continue her course during the night, do you concur in that statement?—Even a steam ship would be obliged to anchor four or five times in going through Torres Straits; I should think not oftener, if the captain were acquainted with the navigation. Going the outer passage, she would only have to anchor once.

1284. Do you not consider that there are advantages which a steamer possesses over a sailing vessel which would materially facilitate the navigation of those seas?—Most undoubtedly, in returning from India to New South Wales.

1285. On the other hand, looking at the duties to be performed by a mail-steamer as compared with a vessel such as you commanded, are you still of opinion that under all circumstances the passage may be considered free from danger?—I do not consider the passage free from danger through Torres Straits; at the same time, with a ship well commanded, there would be comparatively no danger; but it is an anxious passage at all times through Torres Straits.

1286. Have you at any period of the year experienced heavy gales, such as are likely to endanger the safety of a vessel when surrounded by shoals and reefs?—I have experienced heavy gales, but not often.

1287. Are there not strong and uncertain currents setting along through the Barrier Reef?—The current in general sets to the north-west, and I believe it to be a considerable current, at the rate of about a mile or a mile and a half an hour before the trade wind, that is the usual current, I never

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met with any other; the tide sets through Endeavour Straits very strong.

1288. Should there happen to be thick weather, when no observation has been taken for days, with this strong current you have spoken of, would not a vessel, in all probability, become bewildered amongst the shoals and reefs, and be in great danger?—You must then have the anchor down till the weather is clear.

1289. What do you consider to be the chief difficulties of the outer passage in going to India?—In going to India, I consider that the erection of the beacon has settled all difficulty. Since the erection of the beacon we have heard of no wrecks; I do not believe there have been any wrecks in the outer passage since; I believe the merchants at Sydney will not let their ships go the inner passage now; I think the problem has been completely solved, by the erection of that beacon upon Raine's Island. In returning it would be a different matter. There would be much more anxiety and risk.

1290. For what reason?—A vessel would not be able to follow the same straight course. In going to India, you go with the south-east trade, and you can steer within a certain limit, which you cannot do in sailing or steaming against the heavy sea which you would meet with in returning; you would be more beset by the currents, and then there are greater dangers in the way.

1291. Was the survey of the outer passage as elaborate as the inner?—The survey of the outer passage consisted in examining the outer edge of the coral reef, but the Coral Sea has never been thoroughly examined; a survey of the Coral Sea is very much needed.

1292. It was in that sea, was not it, that a vessel was lost the other day?—Yes, I believe so; I saw an account of it in the paper; she was lost upon a well-known reef; most of the reefs, I believe, are well known. There is a zone, about 150 or 200 miles in breadth, which all the ships take in going the outer passage, in which they can keep quite clear of danger, I believe.

1293. You do not know anything of the particulars of her loss, do you?—She appears to have been out of her position.

1294. You do not know whether it was to be attributed to the state of the atmosphere?—I do not know.

1295. In the outer passage, is the course directed by astronomical observations or by land-marks?—By astronomical observations.

1296. You

1296. You are out of sight of land, in fact?—Entirely out of sight of land. Rayne's Island beacon is 70 miles from the main land. Capt. *F. P. Blackwood*, R. N.

1297. I am going to read you a passage from Mr. Jukes's work; I think he accompanied you on that expedition?—Yes. 2 May 1851.

1298. He states, "However complete and accurate may be the surveys of Torres Straits in the Coral Sea, it must always remain a dangerous navigation. Slight accidents, such as hazy weather, mistakes in the reckoning, unknown errors in the chronometer or sextant, or want of completeness or soundness in the rigging or finding of the vessel (to say nothing of carelessness and incapacity in the navigator), will always cause a pretty high average of wrecks in the vessels passing through Torres Straits." Do you concur in that statement?—Not entirely; I think that has been rebutted by the fact of so many ships having gone safely through since the beacon has been erected.

1299. Mr. *Cooper.*] In that passage he seems to include the dangers of the Coral Sea with those of the Straits, whereas there may be a great deal of difference between the two?—A great deal of difference.

1300. *Chairman.*] Do you consider that the channel is now so well known, and the chart so accurate, that the same danger is not to be apprehended?—I do; I believe the charts of that part of the world now to be perfect; the channels have been surveyed and re-surveyed.

1301. Are there not portions of the route which a vessel would have to pass between Sydney and Singapore of almost equal danger to Torres Straits themselves?—I do not believe there are; at least, I know of no such part.

1302. To the southward of the Breaksea Spit, has the line of coast been thoroughly surveyed?—Thoroughly.

1303. Has the Arafura Sea been thoroughly surveyed?—It has not been surveyed at all.

1304. Are there not land falls which may lead to difficulty in its navigation?—I have no doubt there are a great many. The Indian Archipelago is quite incorrectly placed in our charts. A survey of that part of the world is very much wanted.

1305. You are aware that certain proposals have been made to connect Singapore and Sydney by steamers?—I am.

1306. From your acquaintance with the navigation of those seas as well as from your knowledge of the points to which such communications should be effected to meet the

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requirements of the colonies, what route should you recommend?—I would recommend in going to India from Sydney, that a ship should take the outer route by Raine's Island. But in returning (and I have considered the question a great deal), I have long made up my mind that even a steam ship would do better by going west about, that is, round the southern part of New Holland, than by taking Torres Straits; I think there would be less delay. Certainly there would be not so much danger in returning by that route, west about by Cape Leeuwin, and I think the ship would make as quick a passage.

1307. Of what months of the year do you speak?—I should say at all seasons of the year.

1308. At all seasons of the year you would prefer the Cape route?—I would come down from Singapore, taking the western passage round New Holland at all seasons; I believe there is little or no difference in point of distance, and a good ship, I think, would make the passage as quickly.

1309. At what seasons of the year would you take that course for the return voyage?—For nine months of the year, in returning to India, I would take Torres Straits passage, by the outer passage or route as it is called; but there are three months of the year, from December till February, when the west monsoon blows along the north coast of New Holland, and then a sailing ship should come along the south coast, for in those very months easterly winds prevail along the south coast of New Holland, but a steam ship might make the passage at all seasons of the year. She would have no difficulty, though there might be more delay.

1310. Are you aware that it has been contemplated to run westward at all seasons of the year in vessels of 1,400 tons, with 300 horse power, working with a screw?—I am.

1311. Do you believe that that could be effected within a certain time at all periods of the year?—I do; with fine ships I see nothing to hinder it.

1312. Do you consider the winds to be stronger off the west coast of New Holland than they are off the North American coast, which is at present traversed at all seasons of the year?—I do not.

1313. Have you surveyed the west coast of New Holland?—Not at all. I have visited it repeatedly. I have visited the Swan River, but never made any survey there.

1314. Into what latitude would a vessel have to run to obtain the trade wind making for the Cape of Good Hope after

after she passed Cape Leeuwin?—She would have to get up into the tropic; it would depend upon the position of the sun where she got the trade; if the sun is north the trade follows it, and *vice versâ*; she would have to run up into the tropic, I should say, generally speaking. I believe we are not sufficiently well acquainted with the return route from Sydney to the Cape of Good Hope; I believe there is a part where they would find northerly and north-easterly winds at many seasons of the year.

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1315. Once within the trade wind she would carry it the whole way across, would she not?—She would carry it the whole way to the Mauritius and to the Mozambique, if she were to run so far.

1316. Can you state the length of time that a steam vessel of ordinary power would be in making the passage from Sydney to Singapore, first *viâ* Torres Straits, and secondly by Cape Leeuwin?—She would go very much quicker by the Torres Straits passage undoubtedly; I consider at most seasons of the year a good steam ship ought to make her passage from Sydney to Singapore, taking the outer route by Raine's Island, in very much less than three weeks.

1317. Are you allowing for the number of times you have stated she would have to anchor?—Yes; she would only have to anchor once in going that way; ships run up to Raine's Island in five days from Sydney; five or six days is the average passage, and they are clear of all dangers on the seventh day.

1318. Where would she anchor?—Between Raine's Island and the western end of Endeavour Straits. Going by the inner passage, she would anchor nine or ten times, I should think.

1319. In that calculation, do you include not only the number of times she would have to anchor in the night, but the chances that she would have to anchor in the day-time also, owing to the state of the weather?—Yes.

1320. Taking the return passage by both routes, how long would a vessel be?—I believe it is a problem that has never been tried by steamers, though it has by two or three sailing vessels, which have made a very long business of it; in two cases they got ashore, and so on; it is a beating passage the whole way against the south-east trade, but I should consider that a steamer taking the inner route, which she ought to take, would be at least five weeks in getting down from Singapore.

1321. Have you read Captain Stanley's evidence before

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the committee which sat upon this subject in Sydney — I have not read it, I have heard of it.

1322. He computes it at the same length of time that you do, namely, 34 or 36 days?—I have not seen the evidence..

1323. What time do you think a steamer would take in running from Sydney by Cape Leeuwin?—If she were a fine steam ship, when she gets round Cape Howe the distance is not above 1,400 miles, and she ought to do it in eight or nine or ten days; I think during eight or nine months of the year she must expect strong westerly winds against her, but not so strong that a fine steam ship could not easily overcome them; I think a sailing ship would take four or five weeks.

1324. From Cape Leeuwin to Singapore, how long would a vessel take?—From Cape Leeuwin to Singapore she would have a fair wind, and would be up in 10 or 12 days more, or perhaps less than that.

1325. Making about 22 days in all?—Yes, if she were a steamer worth anything, and in good hands.

1326. For the passage by the Cape of Good Hope, what length of time would you allow?—A screw and sailing ship, or full-rigged ship fitted with screw power, there would have an advantage, she would get into the trade wind, and if she sailed well she would run down her westing; I should think she ought to do it nearly as quickly returning as going, but it would very much depend upon the way in which she got round Cape Leeuwin; here she would find during some parts of the year heavy westerly gales against her; but there are three or four months in the year when easterly winds prevail.

1327. You have stated that there are no gales sufficiently severe materially to affect a steamer in her passage?—I think they might delay her a few days; there is nothing to stop her.

1328. Even at the height of those gales, what do you consider would be the difference in the time of the passage?—I should think there might be a difference of several days; instead of being 10 days, she might be 15 or 16 days.

1329. What calculation do you make as to the time which would be occupied in the whole passage from Sydney to the Cape of Good Hope?—A good first-class steamer ought to do it in a little over five weeks.

1330. A vessel running from England for Sydney desirous of making the most rapid passage, would not touch at the Cape of Good Hope, we have been given to understand?—I should

I should agree with that; she would experience delay in going to the Cape.

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1331. What do you think would be the length of the passage from Sidney to Southampton, taking the shortest route that a screw steamer could take?—I am hardly prepared to answer the question; I have not sufficiently considered the distance, but a good sailing ship gets up from the Cape of Good Hope to St. Helena in about eight or nine days; if you cross the Line happily you might get up to England, with a steamer especially, in 18 or 19 days more, I should think; but I am not prepared fully to answer the question.

1332. Have you navigated the coast of New Zealand?—I have visited New Zealand, but never navigated the coast.

1333. Can you tell the Committee what length of time you think it would take a steamer to pass from Sydney to Wellington, in Cook's Straits?—The average sailing passage of a good ship from Sydney to New Zealand is between nine and ten days, so that a steamer should certainly do it in six or seven days, I should think.

1334. And return in the same time?—Yes.

1335. What are the prevailing winds?—The prevailing winds are from the west, when you get past the parallel of 30° south latitude.

1336. Have you visited the principal colonies of Australia?—Yes, I have.

1337. Do you consider the harbours easy of access, and are there conveniences at any of the ports for careening vessels?—The harbours of Port Phillip and in South Australia, Van Diemen's Land, and Sydney are all of them good harbours; at Sydney they are now about constructing a dock, I understand, for receiving steamers; but there are not many facilities at the other places for careening vessels.

1338. What do you consider would be the best mode of giving steam communication to the Australian colonies; should it be direct to one point, with branch steamers from that point, or supposing the southern passage of Australia to be taken, should the principal steamer touch at the various ports along the south coast?—I think with respect to those important colonies, Port Phillip and South Australia, although I would not go so far as to say that the steamer should touch there, yet if there were any arrangement for meeting the steamer, they should have a share of what was going on; I do not think, however, that any great delay should be allowed to take place; they are so completely in the track,

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that it might be easily managed to have branch steamers to and from those places, I should think.

1339. Mr. *Divett.*] Are the variations of the shoals very great in all coral seas?—I believe not; I believe it is now generally established by geologists that corals do not grow at the rate they were formerly supposed to grow at.

1340. They do not increase very rapidly?—No.

1341. Therefore the effect of a survey made this year would not be likely to be seriously changed by a survey made 12 months afterwards?—I should think not, or even 50 or 100 years afterwards.

1342. I think you stated that a survey was wanting between Endeavour Strait and Singapore?—Yes, I did.

1343. Is there any great extent of that sea which requires survey?—By the Arafura Sea, I suppose to be meant those islands running parallel to Java. That sea has never been surveyed at all: the only charts we have are charts compiled by officers of the East India Company: there has been no regular survey ever made of those islands; many points are totally unfixed.

1344. Is it a sea with many coral reefs in it?—A great many.

1345. Is the channel through those seas which is free from danger a wide one?—Yes.

1346. There is plenty of room?—Plenty of room.

1347. With respect to the sea outside Raine's Island, are there any dangers likely to be encountered between that and Sydney?—There are.

1348. Has that sea been sufficiently surveyed to enable a ship, with common caution, to avoid those dangers?—That sea has never been surveyed, but from the experience of the numberless ships which have passed up it, I believe myself that most of the dangers are known, but it has never been surveyed, and an examination of its dangers would be very important.

1349. Has the Great Barrier Reef outlaying branches of any great importance?—No, I do not believe it has; those are detached coral reefs.

1350. At any considerable distance from the Barrier Reef?—Yes, some of them 200 are 300 miles off.

1351. Have many ships been recently wrecked in going up from Sydney, from dangers previously unknown?—I believe not.

1352. What is the width of the inner passage between the mainland

mainland and the Barrier Reef?—It varies from eight or nine miles to 15 or 20 miles.

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1353. It is not sufficiently wide to allow a ship to run with anything like security at night?—No.

1354. How many nights did you say you thought it would be necessary for a ship to anchor upon that course?—On the return route I should consider at least five times.

1355. Do I correctly understand you to consider what is called the outer passage utterly unsuited to a ship coming down from Singapore to Sydney by Torres Straits?—I confess that I do.

1356. Are the gales very severe upon that coast?—There are gales, but of rare occurrence on the east coast.

1357. Do those gales blow during the greater part of the year?—No.

1358. At what period of the year would it be possible for a steamer coming from Singapore to make the outer passage conveniently?—I think there are times when she would find the outer passage a difficult one; she would meet a heavy sea with the south-east trade; and I do not think she would make it so successfully or so well as the inner passage.

1359. You think it is absolutely necessary that a steamer, in attempting to make the passage from Singapore through Torres Straits to Sydney, should take the inner route?—I think so.

1360. At all times of the year?—Yes; it is, however, a problem which remains to be proved.

1361. What loss of time should you suppose a steamer would have to encounter, under ordinary circumstances, in anchoring at night by the inner passage?—I think she might probably lose six or seven days, or more than that, if the weather were thick.

1362. *Chairman.*] You said 10 days in your former evidence?—I said 10 days going.

1363. Mr. *Divett.*] Do you mean six or seven days of 24 hours each?—I mean six or seven days of 24 hours, but that would not be so generally speaking; the general detention would be from four to five days.

1364. By the inner passage?—Yes.

1365. What would the delay be supposing she took the outer passage?—She would have to anchor only once in taking the outer passage, but the delay would then arise from her meeting the heavy sea, which would stop her passage in the Coral Sea.

1366. I observe this passage in Mr. Jukes's narrative of the

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the voyage of the "Fly." "She would likewise require to proceed slowly during great part of the day, and whenever the sun came ahead of her would have to stop till it had passed and the glare on the water had faded, so that the passages between the reefs should be seen"?—It would depend very much upon the officer who had the command of the ship; if the ship were in the command of such officers as there are at Sydney, who have been through, perhaps, 50 times, it would not be necessary. It would be requisite to put the ship into the hands of a man who knew Torres Straits, certainly.

1367. Assuming a person with a fair average knowledge of that sea, what loss of time should you suppose would arise both in the outer route and the inner route, from the necessity of caution mentioned in that narrative?—I should think in going down the inner passage a vessel would certainly lose four or five days at least; that would be quite necessary, even with such fine charts as there are now.

1368. Do you mean four or five days in addition to the loss of time in anchoring?—No, four or five days would be the whole extent of the loss.

1369. Four or five days you think would cover all the loss occasioned in the first instance by anchoring, and in the second instance by the caution required in consequence of having the sun before them?—I think so with a practised hand; but a man might lose 10 days, or even more, if he were an unpractised hand.

1370. Have you given your attention to the class of steamers which would be necessary for the navigation of the two routes; would a steamer, for instance, of much less power suffice for the route by Singapore, through Torres Straits to Sydney, than would be required for the route round Cape Leeuwin?—I think for the return to Sydney from the eastern islands of India, by Torres Straits, you would require a powerful steamer; you would have the east monsoon against you for the best part of the year.

1371. The advantage you would gain at the one end you would lose again at the other?—Yes.

1372. Therefore a steamer of the same power which would be required for the route by Cape Leeuwin would be equally required in the narrower sea through Torres Straits?—Yes, in going back to Sydney.

1373. With respect to the voyage from Sydney, is it your belief that by taking the inner passage you would be able to effect it with a steamer of much less power than you would by

by the other route?—I consider myself that the inner passage, looking to the track which we see all merchant ships are using, would be quite put out of the question now; they all use the outer passage, with very few exceptions indeed.

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1374. With reference to the time which a vessel would occupy between Singapore and Sydney, taking the southern route, and the Torres Straits route, what difference do you think there would be?—You must hardly make the comparison from Singapore, because there would be a little detention in getting clear of Java Head, but if two steamers could be contrasted, one going west about round Cape Leeuwin, and the southern coast of New Holland, and the other going through Torres Straits, the one going to the westward I think would go as quickly as the other.

1375. Do you say that, taking for granted that she is not to lose any time in calling at intermediate places?—Yes; as a question of speed I should say so.

1376. Have you ever commanded a screw steamer?—Never; but I know what their performance has been.

1377. Mr. *H. Berkeley.*] Have you considered the Cape of Good Hope route?—Yes, I have.

1378. Do you consider that a screw steamer could make the passage with any degree of regularity from Adelaide to the Cape of Good Hope in returning to England?—Yes; I think a fine well-found steamer might.

1379. A screw steamer?—Yes.

1380. Mr. *Cowper.*] Have you met with any coral reefs which were sufficiently near the surface of the water to damage a ship, which could not be seen by any one on the look-out?—I think a good look-out will generally warn you of a coral reef; what we call a sunken patch; but then you must be cautious that the sun is not glaring in your eyes, or you will not see it.

1381. Do you think that a steamer going at eight and a half knots an hour would be required to slacken her speed on account of the risks arising from coral reefs?—Not if she keeps a good look-out, generally speaking.

1382. Do you consider that on the passage by the western route, to Sydney round Cape Leeuwin, a steamer capable of going at the average rate of eight and a half knots an hour, would have that speed materially diminished by the winds and seas which she would meet with on that voyage?—No; on the contrary she would have the wind on her beam going down the west coast of New Holland, which would take her along at the rate of nine, or 10, or 11 knots, and

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and by using her steam as well she would then get into the westerly winds and would make a very quick passage; there would be no delay at all.

1383. Have not sailing vessels great difficulty in passing round Cape Leeuwin to the westward?—Yes.

1384. Must not considerable delay arise off Cape Leeuwin?—To sailing vessels there would be delay, and even a steamer would be stopped to a certain extent.

1385. In the case of a steamer with an auxiliary screw, must not you allow for a good deal of delay before she could get round Cape Leeuwin?—I think a fine and powerful steamer might make the passage round in 10 days.

1386. Are you speaking of an auxiliary screw vessel?—Yes; I am speaking of a vessel with auxiliary screw power.

1387. Should you say that in the passage by Cape Leeuwin an average speed of eight knots an hour could be kept up by a vessel which could maintain that speed under ordinary circumstances?—Eight knots an hour might be a high average on that passage, but when she is round Cape Leeuwin all difficulty ceases; she then runs up into the south-east trade and runs down her westing.

1388. So that the chief delay would occur at no very great distance from Cape Leeuwin?—Certainly.

1389. Are you aware why it is that merchant sailing vessels so very rarely take that route?—Because up to the present time, as the Committee is aware, there have not been many first-class ships, or fine sailing ships, such as they are now building; inferior vessels have gone round, and they invariably fail. You require a well-found ship and a fast-sailing ship to get round that cape, but with a screw steamer, a fine ship of 1,600 tons, I do not see that you would meet with any difficulty there.

1390. Is not it almost the only passage in the world which ordinary merchant ships are not willing to encounter; and is not that fact rather a proof that it has difficulties which are peculiar to itself?—They have, in going to India, the choice of a much easier passage, round through Torres Straits; they prefer the rapid passage through Torres Straits, even encountering its danger, to going to the westward.

1391. So that, to their minds, the dangers of the coral reefs are not so formidable as to make them prefer to go round Cape Leeuwin?—Certainly.

1392. Admiral *Bowles*.] How many months in the year do westerly winds prevail on the coast of New Holland?—About nine months of the year; in January, February, and March

March the easterly winds prevail, and then the traders from Sydney to England take the Cape of Good Hope route.

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1393. Are the gales as heavy, do you think, on that coast as they are in Europe?—I think quite as heavy; they are of shorter duration, but during the time they last they blow very hard indeed.

1394. Putting all the questions which have been asked you with respect to Torres Straits aside, and looking at the question as a whole, which passage do you think preferable, the one by the Isthmus of Panama, the one by Torres Straits and India, or the one by the Cape of Good Hope, taking into consideration the condition of the Australian colonies, the great extent of emigration which is going on from this country, and the amount of merchandize which is going out?—I should say the Cape of Good Hope route, certainly.

1395. Do you think there is any practical difficulty in the return voyage between Sydney, or whatever point it may be determined to stop at, and the Cape of Good Hope?—I think none whatever with fine ships.

1396. Supposing you had to determine the question, which would be the point you would select for the principal steamer to stop at; would not it be advisable that she should not go farther than Van Diemen's Land, the mails being taken on by branch steamers?—I think Sydney, being the capital, should be the principal point certainly; Sydney has many advantages also in the way of affording facility for repairs.

1397. What difference do you think it would make in the homeward passage, whether she started from Sydney or from Launceston?—There would be a difference, doubtless; a difference, I dare say, of four days.

1398. Mr. *Divett.*] Do you know Bass's Straits?—Yes.

1399. Is there any difficulty in a steamer approaching Bass's Straits so as to go through them with safety?—None at all.

1400. The passage is well lighted is not it?—Yes, and even before it was so there was no difficulty.

1401. A steamer coming from the eastward would be able to run in without any check at all?—I should think so at all times.

1402. There would be no advantage gained in running to the south of Van Diemen's Land therefore, in your opinion?—Not the slightest; Bass's Straits is as safe a navigation as the English channel.

1403. Lord *Naas.*] Have you had any opportunity of discovering

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discovering what the wishes of the colonists are in reference to these two lines?—No, I have not.

1404. You cannot say what the general feeling of the colonists is?—No, I cannot; it is five years since I was in New South Wales.

1405. Mr. *Mangles.*] With regard to the saving of time by the establishment of branch steamers, would not it come to very much the same thing, whether the main steamer started from Sydney, or branch steamers came down from Sydney to meet it?—The steamer would be nearer her point of return; there would, I apprehend, be a saving of time.

1406. In speaking of a saving of time, it must of course be borne in mind that the other branch vessels would have to come down to meet her, and the time that would occupy must be taken into account?—Yes, certainly that is so.

1407. Do not you remember that it was alleged at one time that the steamers from Bombay to Suez could not possibly face the monsoon?—I recollect it was alleged.

1408. *Chairman.*] Are you aware that there has been a proposal made by some parties to connect this country and Australia *viâ* the Isthmus of Panama?—Yes; there are proposals for that purpose.

1409. Do you know anything of the navigation of the Pacific?—I have been to the Society Islands.

1410. Do you think that such a course would be one to be recommended?—I do not, for this country. I think the important routes to us are the western routes.

1411. What are the objections which you would state to the Panama line?—In the first place, there would be the transhipment of goods and passengers and merchandize, and everything else, which would be objectionable, and would cause delay. I am not sure that you would gain anything in point of time. Besides that, you have not the advantage of touching and stopping at numerous important points. I do not see what is to be gained by it, even if it were very much shorter.

1412. Mr. *Divett.*] Do not you think the Panama route would have all the disadvantages of the Suez route, with very few of its advantages?—Indeed I do. I do not see what advantage it would have; it would be a very delightful route, no doubt, and you would have fine weather; but looking at it commercially, I think it would have no advantage at all.

1413. Mr. *Mangles.*] Is not fine weather an advantage?—It is for people out of health, and so on. But even on the other

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other route, when you get into a certain latitude you run down your easting in the same way, and even more quickly, for you have a stronger wind. Sometimes the wind in the Pacific is blowing a light breeze, which will not send the ship more than five or six knots through the water.

1414. Do you know anything of New Zealand?—No; it was some years ago that I visited New Zealand.

1415. Supposing coal to be found at New Zealand, would not it be practicable to coal at Taheite, and even at Panama, for New Zealand?—No doubt, if you sent coal there; but I consider a good sailing vessel would make the passage from Panama to Sydney almost as quickly as a steamer.

1416. Mr. *Divett.*] Does your knowledge of the Southern Pacific enable you to state the course which a screw steamer would have to take on her return voyage from Sydney to Panama?—She should get into a high southern latitude, and run along before the westerly wind; then when she gets to the coast of South America she would run to the north.

1417. What difference in point of distance would that make?—I have never calculated the comparative distance.

1418. Lord *Naas.*] The whole course would be a dead run on her return?—Yes.

1419. There would be no place at which she could touch?—No.

1420. *Chairman.*] She would hardly require to touch anywhere, would she?—No; she would go with a fair wind.

1421. Mr. *Mangles.*] Why do you think a screw steamer could face the wind and make a straight course in the Atlantic, but could not do so in the Pacific?—I have not said that she could do it in the Atlantic. For short passages I consider a paddle-wheel steamer is the most valuable, but for long passages a full-rigged ship, with a screw, is the vessel which you want.

1422. Supposing you had such a screw steamer in the Pacific, why should she go to the southward?—I think she would make the passage quicker by going to the southward than by going against the trade. I should think the number of miles from Sydney to Panama must be about 5,000 at least, and a vessel would have to breast the easterly trade the whole way against her by keeping a straight course.

1423. Mr. *Divett.*] She would have to breast the wind, which is pretty continuosly blowing in that direction?—Yes; she might do it perfectly, if she could find places to coal at.

1424. Mr. *Berkeley.*] In the event of a war with America, do you think we could hold our own footing in Panama?—I should

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I should doubt it very much; it would be very troublesome to do so.

1425. *Chairman.*] I wish to read you a passage from a Return from the hydrographer's office, which was made to the House of Commons in 1848; that is since your survey, is it not?—Yes; I came home in 1846.

1426. It is stated, "The strait has been satisfactorily surveyed but before it becomes the great highway for vessels to and from Sydney, its approaches, and also the contiguous coast of New Guinea, should be more intimately known;" do you concur in that statement?—I concur in considering that the Coral Sea, by which I mean the sea outside the great Barrier Reef, requires an examination; it has never yet received a thorough examination, and I think it would be a very important work to examine all the dangers outside. The coast of New Guinea has been examined by Captain Stanley and Lieutenant Yule, and the Coral Sea requires an examination, certainly.

1427. Mr. *Cowper.*] Do you think that any further survey is required for the purpose of selecting the shortest and best route between Sydney and Singapore?—No; I consider the east coast of New Holland at this moment to be as well surveyed and examined as the coast of Great Britain almost, if not better.

1428. Mr. *Mangles.*] I hold in my hand a letter from Captain Fitzroy, from which I wish to read to you a passage. He says, "Between Panama and Sydney the ocean is unequalled for the facility afforded to navigation. Steady, moderate breezes, regular currents, and clear weather are everywhere prevalent. The precise situation of every island near the proposed route is known; supplies may be procured, and coal can be carried cheaply from Western America, New Zealand, or Australia, if not from the northern Atlantic. Perhaps in no part of the world could screw steamers be employed to more advantage, if their course were from Panama to Tahiti and Sydney, returning eastward by New Zealand and Callao. By such courses favourable winds would be found throughout the greater part of the passages both ways." Do you concur in that opinion?—To a great extent I do. My chief objection to the Panama route is, that it leads to nothing; it is not the route which our commerce and trade requires. If there were any object in the Panama route, the question would be a very different one, but it leads to nothing.

1429. Does not it lead between England and Sydney?—You

You have a much more important route to the westward, I think. The intermediate trade of America is not to be named in the same day with the trade of India. Capt. *F. P. Blackwood*, R. N.

1430. Is there not a considerable trade to California?—A large trade has sprung up within the last three or four years. 2 May 1851.

1431. Mr. *Cowper*.] Do you intend to convey the impression to the Committee, that though the winds in the Pacific Ocean are, in one sense, favourable to navigation, they are not such as would assist in the attainment of great speed?—In general it is a pacific sea; it rarely blows hard from the eastward: You have not such strong easterly winds as you meet with in the Indian Ocean between New Holland and coast of Africa. In the Pacific Ocean you have generally moderate breezes.

1432. Do you think the result would be that vessels with auxiliary screws would not be able to attain the same amount of speed in the Pacific Ocean as they would in the Atlantic?—They would attain more speed against the wind, because there would be less wind against them; but in going with a fair wind they would not sail so fast on account of the wind not being so strong. I do not think they would make the passage so rapidly.

1433. Mr. *Stanley*.] On the whole, for a steamer, the calmest sea is the best, is it not?—Yes.

1434. It is better to have no strong wind from any quarter?—Certainly, for a paddle steamer, but not for a screw.

Lieutenant *Charles Bampfield Yule*, R. N.; called in, and Examined.

1435. *Chairman*.] WHAT rank do you hold in Her Majesty's service?—I am a Lieutenant. Lieut. *C. B. Yule*, R. N.

1436. During what years were you employed in the survey of the northern and eastern coast of Australia?—From 1842 to 1849.

1437. Will you state to the Committee the points to which your survey was directed, first under Captain Blackwood, and secondly under Captain Stanley?—First, under Captain Blackwood, the southern extremity of the Barrier Reef, round Breaksea Spit, Port Bowen, the main land from West Hill to Cape Conway, Whitsunday Passage, Rockingham Bay, and the Barrier Reef, from Cape Grafton to the northward as far as Murray Island. On the second trip with Captain Blackwood, I assisted in surveying Bristow Island on the passage

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from Cape York to the south coast of New Guinea; afterwards, with Captain Stanley, I took part in the survey of the inner route from Halifax Bay, along the north-east coast of Australia to Cape York; I re-examined Endeavour Strait (having previously surveyed it under Captain Blackwood's orders), and surveyed the straits lying between the Prince of Wales's Islands, and the south coast of New Guinea; in 1849 and 1850 I assisted in surveying from Cape Deliverance (the eastern extremity of the Louisiada Archipelago) to the westward, all the islands and reefs lying off that Archipelago, together with the southern coast of New Guinea, to where I left off at Cape Possession in 1846; latitude 8° 35′ south, longitude 146° 27′ east.

1438. That is the latest survey which has been made, is it not?—It is the latest survey; there is a zone of 25 miles broad surveyed to the south of those reefs, and the coast of New Guinea, showing that there is a safe passage.

1439. Will you describe first the outer, and then the inner passage?—The outer passage would be from about 23° latitude, and about 300 miles from the east coast of New South Wales in a north-westerly direction, through the Coral Sea, entering the Barrier Reef through the Raine's Island passage, then continuing a north-westerly direction still further, and passing through Torres Straits between New Guinea and Cape York. The inner route would be entered to the southward, between Breaksea Spit and Swaine's Reef; the coast would be followed at an average distance of seven or eight miles from the land, ranging from 2 to 15 miles; the track would be along the coast as far as Cape York, where the inner route terminates to the northward.

1440. Which of those passages should you recommend for a communication, going northward first, and then coming southward?—Until the outer route is thoroughly known, I should prefer the inner route, simply from the circumstance that the inner has been thoroughly surveyed, and the outer has not; but I conceive that the outer route would be, if surveyed, much safer and more expeditious.

1441. There are three routes for a steamer going from Sydney to Singapore; there is the route *viâ* Cape Leeuwin to the westward, and there are the inner passage and the outward passage to the eastward; which of those three routes should you recommend a steamer to take, and at what periods of the year?—In proceeding from Sydney to Singapore, from March until September or October, I should proceed by Torres Strait, and, for the reason which I have just

just now given, pursue the inner route in preference to the outer. During that season of the year ending in November, say from December to March, I think the route by Cape Leeuwin much safer and more expeditious.

1442. Will you state to the Committee the advantages of the route by Cape Leeuwin?—By this route there are fewer dangers in the way, an easterly wind generally prevails during the months I have just mentioned, from December till March, which enables a steamer to proceed to the westward and round Cape Leeuwin, with expedition and safety, whereas through Torres Straits, there is more rain and more wind and more likelihood of bad weather during those months, than at any other season of the year.

1443. What length of time do you calculate a vessel would be in making the passage from Sydney to Singapore by Cape Leeuwin?—The distance being the same, or the same within 100 miles as that by Torres Strait, I conceive it might be done in 30 days.

1444. What time would a vessel occupy starting from Sydney, in going to the north through Torres Strait, taking the inner passage to Singapore?—About 30 days.

1445. Going by the outer passage, how long would she take?—I think about 25 days.

1446. You have stated that you consider the inner passage to be thoroughly surveyed; do you mean by that, that you consider that passage to be safe for steamers carrying on postal communications?—The southern part, from Breaksea Spit to the Palm Islands, was first surveyed by Captain Flinders and Captain King; which I cannot be so answerable for as the portion which I have been engaged in; but from the Palm Islands to Torres Strait, I think the passage is safe, though great precaution is required in navigating that channel, particularly by vessels commanded by persons who are not acquainted with the Coral Sea navigation.

1447. At what period of the year do you consider this passage is safe for vessels?—I conceive it safe at any season, the water being smooth. I think a steam vessel may pass north or south at any season of the year with safety, provided great precaution is taken.

1448. How would a vessel on that passage direct her course, by astronomical observations or by landmarks?—In the inner route, by landmarks entirely.

1449. At what distance would she stand from the shore?—Generally from three to ten miles.

1450. Have you ever experienced on that coast thick and drizzling

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drizzling weather, such as would prevent a vessel making out those landmarks?—Very seldom, except during the months of January and February, when there are occasional squalls, with thick heavy rain, which are not generally however of very long duration.

1451. In such a case would a vessel have to anchor?—The only safe measure she could adopt would be to anchor under those circumstances.

1452. Could a vessel pass through the dangerous parts of this passage at full speed, averaging eight or nine knots an hour, with security?—In the day-time, during the whole passage, I think she might, by keeping a good look-out, go on at full speed.

1453. If a vessel were compelled to anchor, would she find good anchorage along that passage?—There is anchorage at every part of the inner route, and generally good anchorage, being sheltered by the Barrier Reef.

1454. To what point might a vessel run going northwards from Singapore before she was compelled to anchor?—To Cape Grafton; a steamer might have to anchor once north of the Percy Islands; with that exception, in fine weather she might go to Cape Grafton without anchoring.

1455. Would she have to anchor at night?—Not during that portion of the passage more than once.

1456. From that portion of the passage to what point would she be compelled to anchor at night?—From Cape Grafton to Cape York, I should say, on the average, she would anchor from four to five times.

1457. Do you take into your calculation the chapter of accidents, such as the chance of her having drizzling weather?—I have spoken of her anchoring at night; but should the weather be thick, so as to obscure the land and reefs, or should the sun be ahead, so as dazzle the eye, it would in such cases sometimes be necessary to anchor in the day time also.

1458. At what point of that route do you consider the difficulty of the navigation in going northward would terminate?—Not until the vessel arrived at Booby Island.

1459. Have you experienced any heavy gales along any portion of that line?—Very seldom such heavy gales as to affect the ship; twice it blew very hard in the months of January and February.

1460. Do you speak of a north-west wind?—The north-west monsoon.

1461. You have experienced such gales yourself?—I experienced

rienced myself a very severe gale; the vessel was under the shelter of a reef, but she drove with two anchors down, and I had to prepare a third.

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1462. What was the size of your vessel?—One hundred and sixty tons.

1463. Do not you consider that a steamer, if she had been in the same position, would have been in considerable danger?—I must say that a steamer would be more adapted to ride out a heavy gale than the vessel which I commanded; the latter had great beam, and was short.

1464. Do you consider that a vessel, having once passed Booby Island, would be clear of all dangers in the Arafura Sea?—I do not.

1465. Has the Arafura Sea been properly surveyed?—It has not.

1466. What is your opinion of the outer passage?—From the number of vessels which have passed by the outer passage, and the few which now pass through the inner route, I conceive that experience proves the outer route to be in many respects preferable to the inner one. It is more expeditious to go by the outer route than by the inner, as there is no necessity for anchoring more than once or twice from Sydney to Booby Island.

1467. Do you consider that the survey of the outer route has been satisfactory?—Not quite. I think the reefs between the parallels of 16° and 24° of south latitude (on one of which the merchant ship "Jenny Lind" was recently lost) require being surveyed and more accurately laid down. From between these reefs towards New Guinea, and Raine's Island, there is a broad and safe track, which may be followed without any further surveying. But to branch off from this track, so as to proceed through Torres Strait by the southern coast of New Guinea, I conceive the water should be more explored before that route can be recommended.

1468. Do not you believe that there are annually shipwrecks in those seas to a considerable extent?—Not annually; and most of those which occur I conceive arise from bad navigation, or from some accident which cannot be guarded against.

1469. Have you found any difficulty in the navigation of those seas, when the sun has been ahead of the vessel, from the glare which it occasions preventing your seeing the coral reefs?—It is unsafe to pursue such a course when the sun is ahead.

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1470. You would anchor under such circumstances?—I would anchor at once.

1471. Must you not take that into consideration among the other delays which may interfere with the progress of the vessel?—It should be taken into consideration; but in many cases the vessel might, in broad portions of the channel, make a sort of zig-zag course, so as to avoid the glare being immediately ahead of her; very often by the vessel's course being altered two or three points from the direct course you may avoid the glare.

1472. With respect to the return passage from Singapore to Sydney, through Torres Strait, which course should you recommend a vessel to take, the inner or the outer passage?—I have come by both routes. I have come by the outer passage, along the south coast of New Guinea and the Louisiade Archipelago, and I have twice come by the inner. I think the same reasons will apply to both routes in coming to the southward as in going to the northward.

1473. From the survey you have made of those seas, is there any course which you think a vessel might take with less danger than either of the courses which are now taken?—I know of no other than the inner route and the one which I have just mentioned, through Torres Strait.

1474. Have you not surveyed the coast of New Guinea?—Yes, together with the Louisiade Archipelago, from Torres Strait to Cape Deliverance, and traversed to a distance of 25 miles out to sea along the whole coast, proving the navigation from Cape Deliverance to Torres Strait to be safe at the above distance from the coast.

1475. You would suggest that a vessel should take the outer route, making for the coast of New Guinea, and run along the coast of New Guinea and so by Torres Strait?—Yes.

1476. Do you consider that Bass's Straits are sufficiently surveyed, and that they are safe at all periods of the year?—They are supposed to be well surveyed. I believe the survey of Captain Stokes is correct, but still it may be added to with advantage, by its being more thickly sounded.

1477. Can you give any information to the Committee as to the western coast of Australia?—I have never been on the western coast, except that I have touched at Swan River.

1478. You cannot from your own acquaintance with them speak respecting the gales which are said to prevail on the southern and western coast of Australia?—I have passed the southern

southern coast three times, but of the western coast I know nothing.

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1479. Have you visited New Zealand?—I have only been in the Bay of Islands for six days.

1480. Have you navigated the Pacific Ocean?—Only from New Zealand eastward round Cape Horn.

1481. Which point do you consider would give the best means of communication to the colonists of Australia for a steamer to be directed to from Europe, Sydney or any of the southern colonies?—I am not sufficiently acquainted with the passage round the Cape of Good Hope either backwards or forwards to be enabled to give any opinion on that subject derived from personal experience.

1482. You cannot state which point in Australia would be the best for steam communication to be directed to?—I cannot.

1483. Which point would give the readiest means of communication to the other colonies?—I should think Sydney would be the point from which you might communicate most readily with the other colonies.

1484. Mr. *Divett.*] You have spoken of the great precaution required in taking the inner passage; you heard Captain Blackwood's evidence?—Yes.

1485. Do you agree with him as to the loss of time which would result from the necessity of great precaution being taken and of anchoring at night?—Yes, I am quite of his opinion on that point.

1486. I understood you to state that the difference would be between about 25 and 30 days?—Yes; I should say it would take four or five days to go from Sydney to Breaksea Spit, and eight days to go through the inner route; therefore I think it would take 14 days for a steamer to go from Sydney to Booby Island, when she would be clear of the strait, but by the other route a steamer would go in much less time.

1487. You spoke of having surveyed from the Louisiade Archipelago towards what you call the Northern Channel; is there a safe passage through the Louisiade Archipelago, through the northern part of Torres Strait, between the land of New Guinea and the extremity of the Barrier Reef?—Yes, perfectly safe, and it has been surveyed.

1488. Is that passage much used?—It has never been used; we have been discoverers as well as surveyors of a great portion of that coast; which has been hitherto unknown.

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1489. But it is a safe passage?—It is perfectly safe; there is a breadth of navigable water explored and sounded of 25 miles.

1490. As far as your knowledge extends, it is even a safer passage than the one by Raine's Island?—It is, because you avoid the complicated reefs, which to strangers navigating the Coral Seas would very much perplex them.

1491. It is only recently that your survey has made it known, and therefore it has not yet been used?—Quite so.

1492. Are you aware whether since the withdrawal of the establishment at Port Essington any establishment has been made at Cape York in consequence of some discussion which took place in the Council of New South Wales on that subject?—I am not aware that any steps have been taken for that purpose; but I have heard of discussions in the Legislative Council on the subject.

1493. From your knowledge of Cape York, do not you think there ought to be some establishment there?—I do, for many reasons.

1494. It would have many advantages which the establishment in Port Essington had not, would not it?—Yes; my reasons are that I conceive it would be the key to that important thoroughfare, (which will become still more so as commerce increases) from all parts of the Pacific, through Torres Strait; it would also be a great place of refuge for the crews of any vessels which are wrecked in the neighbourhood, and I think it might become also a commercial depôt. I think the Malays and the inhabitants of many of the islands of the Indian Archipelago, and those in the direction of New Guinea would be very much induced to come there to trade, as they do to Singapore, in preference to going to the Dutch settlements.

1495. There is a great deal of fine country, is not there, on the coast of New Holland within the Tropic?—There is to the southward; but I have heard of it rather than seen it.

1496. You know nothing of the country beyond the coast?—Nothing but the coast.

1497. Mr. *Cowper.*] In the case of a paddle-wheel steamer capable of going 8½ knots an hour, and taking the outer passage, do you consider that the peril from sunken coral reefs would be such as to prevent her going at the top of her speed?—The greater part of her distance she might go on without having to slacken her speed at all; from having heard of such a number of ships going by the outer route, and

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and not having heard of one being wrecked between the reefs near the Tropic and Raine's Island, I should think that during that portion of her course she might go at her full speed.

1498. Is there any portion at which she ought to go much more cautiously?—Great precaution would be required in navigating the vessel.

1499. You said that she would probably have to anchor during one night?—Yes.

1500. Would there be any other delay beyond anchoring that one night?—Nothing but that night, or at the most two nights, depending upon the time she made the Torres Strait.

1501. Northwards of Raine's Island she would have a smooth sea all the way to Singapore, would not she?—When clear of Torres Strait, she would have to go through the Arafura Sea, and there may be sometimes tempestuous weather, and so there may be to the westward again; but seldom a very heavy sea.

1502. That is a comparatively small portion of the voyage, is it not?—Yes, in that portion of the navigation after clearing Torres Strait, the seas would be what may be termed inland seas. They would not have anything like an ocean swell to contend against; they might have strong breezes, and hurricanes have been known in the north-west monsoons.

1503. Do you think, upon the whole, the voyage would be a very favourable one for attaining a high speed?—I think the great advantage would be having smooth water, but there are places where a great deal of caution would be required on account of the dangers which exist in the shape of sunken shoals.

1504. Have you ever been off Cape Leeuwin?—I have been off it three times.

1505. Have you found a very heavy sea rolling in from the south or the south-west?—I had a heavy gale on one occasion, but that may be considered nothing extraordinary; there was a heavy sea running, but I met with no tempestuous weather except on that occasion.

1506. Do you think an auxiliary screw vessel, having to go round Cape Leeuwin to the west, would meet with much delay?—I have been so long away from England, that I hardly know enough of the powers and capabilities of the auxiliary screw vessels to give an opinion upon the subject; during the winter months, I should say it would be difficult for

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for a steamer of any description to get round; there would be great difficulty, and her speed would be necessarily slow.

1507. Are not sailing vessels altogether stopped for a considerable portion of the year in going from Bass's Straits round Cape Leeuwin?—It would be very difficult for them to get round; I do not know of their being entirely stopped; small coasters and other small vessels have done it.

1508. Have you heard of many sailing vessels being detained in King George's Sound in consequence of being unable to get round Cape Leeuwin?—I have not heard anything on the subject.

1509. Admiral *Bowles.*] Speaking of the best sailing ships, do you think they would find that passage a more difficult one than sailing under ordinary circumstances in European and American seas?—If the wind were blowing west, and it were a strong wind, I think there would be a very heavy sea; I should not recommend that route as the proper mode of making the passage to the westward in the winter.

1510. Mr. *Mangles.*] Do you know anything of the coast of Malabar?—I have never been there.

1511. Lord *Naas.*] Have you had any opportunity of ascertaining the feelings of the colonists on the subject of steam communication?—Their general opinion has been one of anxiety to have steam communication; I have generally been asked for information as to the best route.

1512. Do you think they have formed a decided opinion as to the particular line which should be adopted?—Their attention seemed more directed to the channel through Torres Strait than any other, as far as I could learn.

1513. Mr. *Berkeley.*] You know the port of Sydney?—I do, well.

1514. Are you aware of the dry dock which exists there?—It was not far advanced, but they were working at it very rapidly, and I think there is every reason to believe that it will be a very superior dock.

1515. Is it a dock capable of containing very large vessels?—The largest steamers I believe it is intended to admit.

1516. Admiral *Bowles.*] How long ago is it since you saw it?—I think I saw it last in April 1850.

1517. What rise and fall of tide is there there?—I think seven feet at spring tides.

1518. Mr. *Stanley.*] To what average distance eastward from the Australian coast outside the Barrier Reef, has there been any effective survey?—I am not aware of any outside the Barrier Reef in the Coral Sea.

1519. That

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1519. That passage, though very often taken by ships, is entirely unsurveyed?—Yes, the information respecting it has been gained chiefly from merchant vessels which have passed through. I believe the position of Wreck Reef, on which Captain Flinders was once cast away, may be considered well-determined.

1520. Lord *Naas.*] Is the outside passage becoming more and more used, do you think?—I have never known the inner route followed very much by sailing vessels, and I think as the trade increases the outer is becoming more used.

1521. Mr. *Stanley.*] You say that the shipwrecks in those seas are frequently owing to bad navigation, are they not also owing to the vessels employed not being of the best class?—I do not think that the weather generally met with is so bad that a small vessel may not be safely navigated there. I should attribute them more to a want of judgment on the part of those who commanded those vessels, unless it may be in such a furious gale that the cleverest man perhaps could not avoid disasters.

1522. Do you consider that in such a navigation as that through Torres Strait, in steering among reefs and through narrow channels, a steamer would have an advantage over a sailing vessel, or the reverse?—I think, looking to the advantages of a sailing vessel, in being able to manœuvre quickly, I should prefer being in a sailing vessel; but a steam vessel, on the other hand, has the advantage, if she is going near to dangers, of being able to back out from them; therefore, there are advantages and disadvantages in both classes of vessel.

1523. *Chairman.*] Have you any further information which you can give the Committee which you think will be useful to them in their inquiry?—I think, with regard to the Arafura Sea, I should give my opinion that some attention should be directed to some of the shoals which are known to exist south of Timor. There are also some dangers said to exist beween Timor, Laut, and Port Essington; also westward of Booby Island.

1524. Mr. *Divett.*] Are you aware whether that sea has yet been navigated by a steamer?—Steamers have gone through, and there is a great thoroughfare for shipping after passing through Torres Strait, whether by the inner or the outer route.

1525. You do not know of any steamer having been through?—I do not know of any steamer having been through,

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through, but all sailing ships do after passing through Torres Strait.

1526. Is the sea between the straits of Sunda and the coast of Australia, and in that direction, sufficiently known to lead you to a pretty confident belief that there are no dangers intervening?—I have never heard of any danger here.

1527. There appears to be only one island marked upon the chart?—I have never been much about that part.

Captain *Robert FitzRoy,* R. N., called in; and Examined.

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1528. *Chairman.*] WHAT rank do you hold in Her Majesty's service?—Captain.

1529. In addition to the ordinary duties of a naval officer, have you attended particularly to the subjects of winds, currents, and general hydrography?—Yes; it was my particular duty to study the winds, monsoons, and currents in all parts of the world, having been employed in a surveying voyage round the globe, as well as particularly on the coasts of South America, and on the coasts of Australasia. During seven years I was employed particularly in that service. I have also been round the world in merchant ships from the west to the east; in the surveying ship I went from the east to the west.

1530. Have you been in New Zealand?—Two years.

1531. While you were in the Australasian colonies did you collect information about the Indian Seas and Torres Straits as well as the Southern Ocean?—Yes; I made a point of collecting information from every quarter—both from those who had been in those places, as well as from those who had studied the matter theoretically—and also by reading works on the subject.

1532. Have you ever been on service in Torres Straits yourself?—Never in Torres Straits. I have been in the latitude of Torres Straits, and near them—in the Indian Ocean at the Keeling Islands—but I have never been in Torres Straits.

1533. From the information you have collected, and your acquaintance with officers who have been through Torres Straits, and in the neighbourhood, are you of opinion that it is a route suitable for mail steamers?—By no means; I think it very dangerous, very uncertain, and likely to be very tedious.

1534. Upon whose information do you particularly rely with respect to Torres Straits?—That of Flinders, Cook, King,

King, Lihou, Horsburgh, Dalrymple, Wickham, Stokes, and many other navigators who have frequented those seas. Krusenstern's authority should be mentioned also, as that of a hydrographer who has collected much information.

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1535. Have you heard the evidence which the Committee has received from two naval officers who have surveyed those straits?—Yes. I may perhaps mention that Captain King, whose evidence has been very much relied on with regard to the Torres Strait passage, is an old and intimate friend of mine. We discussed the subject of that passage, I may say, more than 20 years ago, at a time when I had an opportunity of meeting and talking over the matter with Captain Lihou, the only man, I believe, who has attempted to make the passage from west to east in command of a ship. My impression, then, 20 years ago, was decidedly against the practicability of those straits for ordinary sailing ships, going slowly and picking their way through. Since that time surveys have been made in some parts. I have continually paid attention to the improvement which has been made in hydrographical knowledge, and instead of being more disposed to think them available for ships than they then were, I think that the dangers have been by no means diminished. The surveys have shown more dangers, and the descriptions of the navigators, who have taken most pains with them, have tended to expose the real character of those waters more distinctly than before. I think the result of the surveys has been to show the numerous dangers more distinctly, without giving navigators the means of avoiding them.

1536. Have you had any experience in steam vessels?—I was five years an Elder Brother of the Trinity House, during which time I was very frequently in steam vessels belonging to the corporation of the Trinity House on all parts of our own coasts. I have made passages in other steamers, between England and Portugal, and I commanded a steam frigate for a twelvemonth—the "Arrogant."

1537. Of what size and power was the "Arrogant"?—She was 1,872 tons, and 360 horse power, nominally.

1538. Are Bass's Straits easily navigable?—Very easily navigable.

1539. Do you state that from your own experience?—Yes, having been through them myself.

1540. What are the peculiar difficulties of Torres Straits, now that the late surveys have been carried out?—I think the danger arises from the necessity of sailing by the eye; during the greater part of the distance you must go by what you

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you can see; if the sky is cloudy, or the weather thick, or the sun in a particular position—or if fog or rain prevails, you must stop. There are strong currents and high tides, and the coral reefs grow very rapidly. In the Keeling Islands I saw a place where, 25 years previously a ship floated, in which then a boat could not swim, so fast had the coral grown up, like trees, under water. Reference has been made almost entirely to Torres Straits, as if that were the only place of danger; but the fact is, that from near the latitude of Sydney along to the eastward of the Barrier Reefs is a very dangerous sea. There are numerous dangers scattered about that sea which have not yet been surveyed; it is called the Coral Sea. Krusenstern, in his large atlas, gives perhaps the best description of those dangers known at the present day; but not of a third, as he supposed, of those which probably exist. From Torres Straits to Singapore the whole distance is one of very broken land, with strong tides and currents intervening. The number of dangers is very great, which may be of minor consequence to sailing ships going slowly, choosing their time, but which would be of material importance to steamers going very fast—by *night* as well as by day. The difference between making a passage in a fast steamer through those waters; and making a passage in the open sea, where there would be nothing to check you, nothing to hinder you from going by the course officially required, by night as well as by day, throughout the whole passage, would be very great. Going through the open sea would not only be a saving with respect to time, but a saving in point of risk. There would be no risk in the one case, there would be great danger besides much delay in the other.

1541. Are such dangers, do you consider, confined to Torres Straits, and peculiar to that region alone?—They are peculiar to the Indian seas as well as Torres Straits and the neighbourhood of the Barrier Reef. I should say, that from the southern tropic, on the east coast of New Holland, all the way to the Straits of Malacca, is a sea difficult of navigation for fast steamers during the night.

1542. Even when the steamer passes Cape York into the Arafura Sea?—Yes, quite so.

1543. Do you consider that in the Arafura Sea she would have to anchor?—She would have to anchor occasionally if she could find anchorage; but there would be difficulty in finding anchorages there.

1544. Do you mean that you consider the whole of the voyage

voyage from Sydney to Singapore a dangerous voyage?—Yes, compared with the open sea voyage; it is a voyage in which you could not run by night as fast as by day; in the open sea you could do so,—but in that sea, so full of small islands, you would be obliged to make a careful course; you would be always looking out for land, and if the weather were dark or thick, of course that land could not be made out.

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1545. Are the winds strong?—In the westerly monsoon they are occasionally very strong, amounting to hurricanes. In the latitude of Torres Straits at times during the westerly monsoon violent gales, sometimes hurricanes, prevail.

1546. Are the winds such as would be an impediment to steam navigation?—Decidedly not, as far as the strength of the wind alone is referred to; those strong winds are temporary, but during the two or three days which they blow, the weather is very thick; you can get no observations during perhaps three days, which, in a sea where strong currents prevail, may be fatal, if among islands and coral reefs.

1547. What originally caused the prejudice which has existed against Bass's Straits?—Bass's Straits have several islands and rocks in them, and they have strong tides; till there was a survey of those straits, ships got into difficulty. Several ships were lost from going incautiously through without having any chart to guide them; but now they are well surveyed, lighthouses have been built and the passage through, either way, is not so difficult as the passage along some part of our own coast.

1548. Between Van Diemen's Land and Cape Leeuwin the Committee has heard that the sea is at some periods of the year very tempestuous; do you concur in that?— I think that the sea between Van Diemen's Land and Cape Leeuwin is, generally speaking, less tempestuous, and offers less difficulties to navigation than the Atlantic between Ireland and the United States of America, far less difficulties I should say; the latitude is only from 34° to 44°, and the weather is mild. The winds are not so strong; neither is the sea so short and high as that of the Atlantic, and at the edge of the Bay of Biscay.

1549. What winds are most prevalent?—Westerly winds except during three months of the year: during nine months of the year westerly winds prevail; during the other three months easterly winds are most common:—those westerly steady to one point; they begin near the north, draw round by

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by the west into the south-west, and end in the south; they blow strongest between the north-west and the south-west, die away as they get to the south, and then there is generally a calm for a few hours following, when the wind goes round again. The longest duration is between north-west and south-west. Those shifts of wind are so constant, that a ship wishing to make her passage to the westward, may take advantage of them with great facility.

1550. Have you experienced any great difficulty in going round Cape Leeuwin?—Very little; no more difficulty than in going round any other headland when the wind is blowing with ordinary strength: occasionally there is a gale of wind off Cape Leeuwin, as there is off every other cape in similar latitudes; but there is no more difficulty in going round that cape than there is in going round any other cape in the world, in the same latitude, I believe.

1551. Have you passed it in heavy gales?—No, not in more wind than would be called a fresh gale.

1552. Were you delayed much?—We were delayed two days; but that was in a very small vessel, a vessel of 235 tons only, a surveying vessel, one of the old 10 gun brigs, which used to be called coffins.

1553. Have you heard of any ships which have suffered much about that cape?—There was one man-of-war, the "Zebra," which was in a gale of wind somewhere near there; it was not exactly off Cape Leeuwin, but in that latitude, a little further west. She hove some of her guns overboard:—she had been a long while in India in fine weather and moderate winds, and was rather taken by surprise in getting into an ordinary gale of wind off Cape Leeuwin, and she gave a very bad account of it: that was in 1835: I have not heard of accidents happening there to other vessels.

1554. Is it not the course which the colonial traders very frequently take?—Unquestionably; it is their regular course from Adelaide, from Port Phillip, and from King George's Sound—to Swan River, and to the Mauritius. All the local commerce between those southern colonies and the Mauritius, as well as India, goes by Cape Leeuwin in the south-east monsoon; Sydney vessels generally go by Torres Straits, but even some of the Sydney ships prefer going to the southward; and during the half of the year when the westerly monsoon is prevalent, they must go by the southward by Cape Leeuwin.

1555. What then has given Cape Leeuwin so bad a reputation?—Because in early times navigators came there from the

the fine weather and smooth seas of India. They first got into the ordinary winds and weather of the temperate zone about Cape Leeuwin, in turning the corner, and attributed the natural result of going from the Tropics into temperate latitudes, to the vicinity of Cape Leeuwin; I can account for it in no other way. Almost every headland in the world has a similar reputation; even in the Mediterranean, Cape Spartivento and other capes have acquired a bad name: Cape Horn and the Cape of Good Hope have always been remarkable as having borne a bad character for winds.

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1556. Mr. *Mangles.*] Was not the Cape of Good Hope originally called the Cape of Storms?—Yes.

1557. *Chairman.*] You have navigated the seas between Cape Leeuwin and the Cape of Good Hope, have not you?—I have.

1558. Do not hurricanes prevail near the Mauritius, in the Indian Ocean?—Hurricanes prevail, at the time of the change of the monsoons, across the Indian Ocean between Madagascar and New Guinea; they are strongest near the Mauritius, but, generally speaking, not so violent as the West India hurricanes.

1559. What is the usual weather between Australia and the coast of Africa?—Remarkably fine weather throughout the year, except at the shifting of the monsoons; a steady south-eastern trade wind with clear fine weather all the way between Australia and Africa.

1560. A ship, therefore, could usually run westward from Australia to Africa, with a fair wind?—All the way.

1561. Are there currents?—The currents are in the same direction with the wind, from the east towards the west:—when you get near Madagascar the current becomes stronger, and then sets along the coast of Africa; as you near the Cape of Good Hope the current becomes stronger, till near the edge of Lagulhas Bank, where it sometimes runs more than 100 miles in 24 hours: in short, the passage from Cape Leeuwin to the Cape of Good Hope is very easy, and the only possible interruption during the year is at the time of the change of the monsoons, the hurricane time. By not going far to the north, but keeping in the southern part of the south-east trade in about the latitude of 20° south, at those times the hurricanes may be nearly avoided.

1562. In what range of latitude?—From 25° to 20° or near the Tropic. The south-east trade comes further south between Australia and the Cape of Good Hope than it does to the westward of that cape.

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1563. From your own knowledge of the working of screw vessels, how long do you consider that a screw vessel, such as is proposed by the Screw Steam Packet Company to be put upon that line, would be in making the passage from Sydney to the Cape of Good Hope?—From Sydney to the Cape of Good Hope, I should say 38 days.

1564. Are you now speaking of the most favourable period of the year?—No, the average, taking the year round.

1565. What difference of time should be allowed between those months in which tempestuous weather is supposed to prevail and the other months when you may expect weather of a more temperate character?—I think a week. I think that during the time of the year, when easterly winds prevail between Bass's Straits and Cape Leeuwin, the passage would be made in seven days; and at the worst time of the year I think it would be made in 14 days.

1566. You yourself having commanded a screw steamer, have you a favourable opinion of them?—Very favourable; and I think that as improvements are introduced almost every month, further improvements are to be expected.

1567. As compared with the paddle-wheel?—Yes.

1568. Are you speaking of a vessel with an auxiliary screw, or one of full power?—Of each, for its own particular purpose. For general commercial purposes and for long voyages, auxiliary screw power I believe to be far preferable, because of its being more economical, and enabling cargoes to be carried, and not requiring so many depôts of coal; but for short passages, where certainty of arrival and rapidity of communication between certain points, under all circumstances, is required, full power would be preferable, of course, but it would be more expensive.

1569. What is found to answer best as the proportion of power to tonnage in an auxiliary screw vessel?—The proportion of about one-sixth of the tonnage gives sufficient power to enable a vessel to go into, or out of any harbour without difficulty, and to maintain an average speed of eight or nine knots an hour in the open ocean.

1570. In a 1,400 ton steamer, such as is proposed by the company to which I have alluded, what proportion of the vessel would be left for cargo and passengers?—In a vessel of 1,400 tons there would be 800 tons space for cargo, with an auxiliary screw.

1571. Taking a paddle-wheel steamer of the same tonnage, what proportion in that vessel could be appropriated to the passengers and cargo?—The space I spoke of would be for the

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the cargo; there would be the passenger space besides, sufficient probably for 100 passengers, including all three classes. In a paddle-wheel ocean steamer of the same tonnage there would not be more than 300 or 400 tons cargo space, so much of her hold would be occupied by machinery and by coals: a similar effect would take place in a screw steamer if with full power; her hold must then be taken up by machinery and coals similarly to the hold of a paddle-wheel steamer.

1572. How is the auxiliary screw used when combined with sails, so as to obtain the utmost advantage?—By making the sails the principal motive power whenever there is wind enough to give the average speed required, say eight or nine knots: if there is wind enough, an auxiliary screw steamer ought to do all she can under canvas, and save her fuel; she should use her fuel only when the wind is too light to enable her to keep up the average speed required, or when going into or out of a port, or in any case of emergency; but in ordinary circumstances she ought to consider her sails the principal motive power, and her steam only as an auxiliary to be used when she cannot otherwise keep up her average rate of eight or nine knots an hour.

1573. How long would a steamer with an auxiliary screw going outwards from the Cape to Sydney be on the passage?—She would be about 32 days going from the Cape to Sydney, that is going direct.

1574. Will you state to the Committee what your calculation is in the case of a steamer starting at Plymouth, and taking that line of passage which would be considered the most rapid for a screw steamer to take direct to Sydney, what the length of her passage would be?—In the first instance, supposing she starts from Plymouth as the western port, she would probably touch at the Cape de Verde Islands, as having a harbour very accessible and convenient for coaling, namely, St. Vincent. From St. Vincent she would go across the equator in about 20° west, direct to the southward, across the south-east trade, as fast as possible, keeping a full sail, not endeavouring to make easting until in the latitude of about 30° south. When through the variables and in westerly winds, which may be expected between that latitude and 40°, she should then steer to the eastward till she gets nearly into the meridian of the Cape, running under sail and not burning her fuel unless she should have calm or light winds. The principle would be, to make as much use of her canvas as possible, burning fuel only in the variables

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and in light winds. The distance she would have to run over would be rather greater, but the time would not be much increased, and the economy in the saving of fuel would be very great.

1575. During what portion of the route would she have to run under steam?—About one-third of the distance, probably, she would be under steam, if well managed; if the principle were maintained of sailing whenever she could sail (being full rigged as a sailing ship), making the greater part of her passage under canvas, and burning coals only when in calms, or in light variable winds, she would not have to steam more than one-third of the distance. The screw ships which have hitherto made voyages to the Cape and home, have not by any means taken the best course. They have taken courses adapted rather to full-power steamers. They have not made the best use of their canvas while they have been burning coal nearly all the time.

1576. In the outward passage you say she would have to burn coal one-third of the way; what would be the proportion on the homeward passage?—About the same, counting the number of days during which she might depend on good winds, and the number of days of probable calms or light winds. It has been usually considered that screw steamers cannot make head against a strong foul wind; but in fact they have an advantage over other steamers, even the best paddle-wheel steamers, in a foul wind, when blowing strong, because they do not attempt to go head to wind; they set what canvas they can carry, and work to windward, rapidly: helped by the screw, they make no lee-way. They make very quick progress in working to windward against a strong wind, when a paddle-wheel steamer would be considerably delayed, by being obliged to go head to wind against much sea, with her paddle-boxes retarding her seriously. A screw steamer under those circumstances would work to windward like a sailing ship, only much more rapidly; she has all the power of a sailing ship of the very best class, and in addition, the assistance of the screw.

1577. Speaking from your own personal experience in the "Arrogant," can you state to the Committee any facts connected with the working of the screw which prove the statement you have now made?—I would instance coming up from St. Helen's to Portsmouth Harbour against one of the hardest northerly gales which had been known for some time in that neighbourhood, with all her masts standing; there was smooth water, certainly, it being between St. Helen's

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Helen's and Portsmouth Harbour, but she came up at the rate of four knots an hour, directly against a gale of wind, before the screw and the machinery were in good order, it being her first time of trial. I give this as an instance of its power in driving a ship of that class, with all her masts standing, directly against a gale of wind. She was repeatedly tried when at sea afterwards, in working to windward, both with the screw and without the screw, and under all variations of circumstances which could be devised. Her performances were most satisfactory in every instance; and I believe similar reports have been made to the Admiralty by the captain who now commands her, Captain Robinson. She has given full satisfaction.

1578. You consider that as one of the remarkable trials of the screw?—Yes; that ship sails as well as the "Leander," which is one of the finest 50-gun frigates; not the very fastest, but a very fine ship. I believe, in recent trials, she has been found to sail even better than the "Leander;" but allowing that she sails as well, it shows that she can do what a sailing frigate can:—and she can also go between eight and nine knots in a calm by the power of her screw only.

1579. Can you go fastest with or without the screw, with a strong wind?—Without the screw, because the ship's way under sail going free, is more than the most rapid advance of the screw when driven regularly by the engine; but the difference is not so great as it is generally supposed to be, on account of the water following close after the ship; you can not overrun the screw till you go about 12 knots. As far as 11 knots, (speaking of the same frigate the "Arrogant,") the screw keeps helping the ship on account of the stream of water which closes immediately after the ship's stern; so that up to about 11 knots you may continue to assist the ship's way, even in a strong wind; but much beyond that, when you make 12 or 13 knots by the force of wind alone, you begin to drag the screw.

1580. Which description of screw has succeeded best hitherto?—Smith's screw has been found to answer, under all circumstances, best.

1581. Is it much in use now?—Very much.

1582. And generally considered successful?—It is gaining ground rapidly; merchant steamers have been and are being built in many places for commercial purposes, to be worked with auxiliary screws.

1583. Is that the screw which it is proposed to put into the screw steamers of this company?—I believe so; it is the

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two-bladed screw, each blade being a narrow section of a circle; I think it is the form generally adopted now.

1584. Lord *Naas.*] Do you think that the great disadvantage which arises from the motive power being at such a distance from the screw, is likely to be obviated by a different adjustment of the machinery?—At present the result of experiment is in favour of the distant position of the screw, the single screw in the deadwood rather than in any other position which has been suggested; there have been double keels and double screws, and almost every variety tried, as well as suggested, but Smith's screw, in the deadwood, up to the present time, has been found to answer best.

1585. *Chairman.*] Who can give the Committee the best evidence upon the subject of the efficiency of the screw at sea?—I think Captain Matthews, who commanded the "Great Western," and afterwards the "City of Glasgow" screw steamer, trading between this country and the United States, and who is now to command the "Great Britain," which is to be fitted as an auxiliary screw steamer of 500-horse power, would give more useful practical evidence on the subject than perhaps any one. Next to him I would mention Captain Chads, C. B., who tried the "Blenheim" with the experimental squadron under the orders of the Admiralty. Captain Chads had rather a prejudice against the screw when he took the command of the "Blenheim;" he had never had anything to do with a screw steamer before, and his opinion, after trying that ship, which was one of the most inferior of the screw steamers, is very strongly in favour of what can be done by the use of the screw. Captain Crispin, R.N., also I would particularly mention.

1586. You probably think that the screw may be considerably improved?—No doubt. Not only the screw, but the machinery in connexion with it.

1587. Mr. *Willcox.*] I believe you are connected with one of the companies, are not you?—With the General Screw Company.

1588. In what capacity?—As one of the managing directors.

1589. Of course you recollect that the "Bosphorus" was to have sailed on the 15th of December, but that day falling on a Sunday, the mails were not put on board till the Monday?—Yes.

1590. When did she sail?—I think on Tuesday, as well as I recollect; it was two or three days after she ought to have sailed.

1591. The

1591. The weather was very bad, was it not?—It was blowing a gale; there was a good deal of sea outside; it was the sort of weather in which no packet should have put to sea from Falmouth or Plymouth; she could not have got round the Lizard without being then in a heavy sea.

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1592. Was it from any difficulty of exit from the port in consequence of the wind, or was it from the sea outside?—It was from no difficulty of exit; she could have got out of Plymouth Sound and as far as the Lizard at any time, but there she would have met such a sea from the westward that she would have been knocking about, and harassing her passengers very unnecessarily.

1593. *Chairman.*] In crossing trade winds, or other well known constant winds, how would you manage in a screw steamer, full-rigged for sailing, with auxiliary steam-power?—I should act exactly as the best sailing ships do (the fine Indiamen belonging to Messrs. Green, Wigram, Smith and others); I would keep a full sail, and carry all possible canvas, to get through the trades as rapidly as possible; I would not hug the wind and lose ground. In the trade wind I would put out the fires; but when becalmed, or in variable winds, I would make all possible progress in the most favourable direction by steam alone.

1594. Lord *Naas.*] Do you think by that means you would get a pretty equal average speed one day with another?—Yes, upon the principle that the screw should be kept going when the average rate of nine knots could not be maintained by canvas.

1595. *Chairman.*] When the screw is not at work is it left in the water?—The screw in the ships which have been to the Cape is turned fore and aft, which is commonly called feathered; it is shifted from its steaming position to a fore and aft position, in which it offers no resistance to the vessel going through the water; but in large ships, such as the "Hogue," the "Ajax," and the "Arrogant," it is lifted up out of the water entirely.

1596. Does the screw work best in iron or wood?—In iron very much the best. There is a great difference between the working of the screw in iron as compared with wood.

1597. For steamers of such a character as would be necessary for carrying out a line of communication between Australia and England, would you think a wooden or an iron vessel best?—I should consider an iron vessel very much the best. The undertaking could not be carried out in wooden ships without a great increase of the time, and

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a very great increase of the expense. The time would be about a fortnight longer, and the expense would be 25 per cent. greater, as nearly as I can now calculate.

1598. Will you state the reason for that?—Because a wooden ship cannot be made to go so fast through the water when propelled by a screw. In the first place the lines of a wooden ship are not so fine. The bottom of an iron ship, from the character of the material, can be made much sharper, both forward and aft. The water passes aft to the screw with much less impediment from the body of the vessel. The screw acts in less disturbed water, and therefore with greater power; so that you have an increased velocity from two causes, from the less resistance of the ship, owing to her finer lines, and from the greater action of the screw, owing to its working in less disturbed water, in water which has been less displaced by the body of the ship. The gain would be the going a knot an hour, probably, during the whole distance, faster in an iron ship than you could go in a wooden one. The increased expense would arise from deterioration in the wooden ship, owing partly to the working of the screw in the after-body. The action of the shaft of the screw would prevent those ships from lasting through a succession of long voyages without much repair; they (*i. e.* wooden) would very soon become shaken in the after-body, which is not the case with an iron steamer. It is rather remarkable that the "Bosphorus" on her return from the Cape a little while ago, was ready to go again on another voyage in four days. Upon her arrival at Plymouth, she was reported ready to sail in four days; there was nothing whatever the matter with her engines, or with her hull. The "Propontis" I have just examined; there is no sign of straining or weakness of any kind in her after-body; her engines are in perfect condition; there is nothing to do to them; but it was not so with the "Hogue," or the "Ajax," or the "Arrogant," or any of those wooden ships in which the screw has been employed. There after a few days steaming only (and their trials were seldom more than a day at one time), there was some straining or weakness, or some defect in the machinery, partly in consequence of the machinery itself not being so firmly fixed in a wooden vessel as it can be in an iron ship. "For instance, in the 'Arrogant' the thrust bearing of the shaft was continually yielding, from the wood itself in which the bearing was secured, giving way. The wood, by frequent compression and constant working, gradually loses its power of resistance, the fibres become bruised and compressed,

compressed, which is not the case in an iron ship; an iron ship affords a very much better foundation for the engine, and for the working of the shaft; the shaft works also much more uniformly."

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1599. On the other hand, is not iron supposed to foul more rapidly than the copper of a wooden ship?—It has hitherto been found to foul much more than copper. Various compositions have been tried, and one or two of those compositions have been found to answer.

1600. Lord *Naas.*] Do you consider the vibration in a screw steamer to be greater than in a paddle-wheel steamer?—No, I do not; I have questioned those who have gone in those steamers to the Cape of Good Hope, and also to Constantinople, and they say that the vessels are easier than the paddle-wheel steamers which they have been in. That has not been the case in men-of-war; in men-of-war there has been considerable movement in the after part of the ship from the vibration of the screw. It has been less lately; the cause is known, and it can be obviated.

1601. You think the vibration in an iron vessel will be much less than in a wooden one?—Yes, because the wear of the bearings which causes the vibration, from the shaft getting more play, does not take place in an iron ship as it does in a wooden one.

1602. Mr. *Cowper.*] Is not there a great noise in the after-cabins in screw vessels?—Where there is that vibration. When the bearings are worn, and the shaft gets at all loose, there is a great noise; but in an iron ship, where the shaft is properly fitted and the bearings are not worn, the noise is very trifling, if there is any.

1603. *Chairman.*] You have now stated your views with respect to the power of a screw steamer; you have likewise stated to the Committee your own practical experience of the winds which prevail off Cape Leeuwin; I wish to ask you whether you consider a screw steamer, such as those which are proposed to carry out that line of communication, are capable of keeping, even in the severest weather, the time that would be necessary to carry out postal communication?—I think they are capable of doing so within a week. If you start from England to Sydney, I do not think that for the first year or two you could depend upon the arrival at either termination of the voyage to greater exactness than a week, but the delay would not exceed a week, which in a two months' voyage is not much. The economy and the various advantages which would be derived must be set against

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against that possible delay. I think the arrivals would be more frequently before the time than after the time, but they would vary. Between the earliest arrival and the latest arrival there might be about a week. You must with an auxiliary screw give up something of punctuality; you gain advantages in point of economy and in regard of the carriage of passengers and goods, but you lose in some degree with respect to punctuality.

1604. Admiral *Bowles.*] As compared with paddle-wheel steamers?—Yes; or as compared with the full power screw.

1605. Mr. *Willcox.*] All the vessels of your company are built of iron, are not they?—All of them.

1606. Are you building now?—Yes.

1607. Of iron?—Yes, of iron.

1608. I believe almost all merchant screw steamers are built of iron; are not they?—I believe invariably merchant screw steamers are now built of iron; there may be a few old steamers which are of wood, but all the new screw steamers are of iron.

1609. Did you ever know of an iron vessel requiring to be replated or repaired except in consequence of accident?—I never heard of one.

1610. Do you know what is the greatest age of any such vessel?—I think there are some which have been 20 years, if not more than 20 years at work.

1611. They have never required repair except from accident?—They have required no repair except from accident, and they remain tight and seaworthy to the present time.

1612. Such being the case, supposing the Government were to advertise for tenders for auxiliary screw vessels for the mail contract, and retained the clause which, for the first time, they have introduced into their last form of tender, that the vessels are all to be built of wood, your company would not be in a position to tender for them?—Certainly not, on present conditions.

1613. You would have to build for the purpose?—We should have not only to build for the purpose, but to propose other terms, longer time, and an additional charge. I doubt whether it would be advantageous for the company to propose to execute the service in wooden ships. It is, in fact, the great advantage that an iron ship, fitted with a screw, offers, which enables the company to propose to execute this service in so short a time.

1614. You

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1614. You stated, did you not, that the difference would be 25 per cent. ?—As far as I am yet able to calculate.

1615. Mr. *Divett.*] Have you calculated accurately the probable time that would be taken from Falmouth or Plymouth to Sydney by an auxiliary screw steamer ?—Yes.

1616. What do you make the minimum time to be, touching at the Cape ?—Touching at the Cape, the probable time to Sydney, allowing for delays on the passage, would be 64 days.

1617. You say you think it necessary to add for uncertainty about seven days ?—I should add half seven days; there would be seven days uncertainty, taking the voyage out and home, between the earliest arrival and the latest. Some passages being shorter and others longer, to the 64 days I should add three days for uncertainty.

1618. That would extend the outward passage to Sydney from Plymouth to 67 days ?—Yes, at the outside. On the other hand, you might do it in 59 days or 58 days.

1619. You think it would be possible to do it in 58 days ? —My impression is that it will be more frequently done within 64 than exceeding 64 days.

1620. With respect to the return voyage, what would be the case ?—I do not think the return voyage would be more than five days longer than the outward voyage ; about 68 days from Sydney to England would be the return voyage.

1621. Mr. *Cowper.*] Does that include a stoppage at the Cape ?—Yes.

1622. What stoppage at the Cape does it include ?—Two days.

1623. Mr. *Willcox.*] Do you propose to coal at the Cape ? —Yes, if required. In coming home almost certainly.

1624. Mr. *Divett.*] Have you given your attention to the relative merits of screw and paddle-wheel steamers, assuming them to have equal power ?—Yes, I have endeavoured to study the subject for several years. It appears by the performance of the French packet-boat, the "Faon," between Dover and Calais, and by screw steamers from Bristol, which have each of them made 13 knots an hour in smooth water, with the screw only, that you may get as much speed from a screw steamer as you can from a paddle-wheel steamer. In the trials of the "Basilisk" and the "Niger," vessels of equal tonnage, with engines supposed to be as nearly as possible of equal power, the one a screw and the other a paddle (in 1849); they were secured stern to stern, and the "Niger" towed the "Basilisk" a knot and a half astern.

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astern. That shows that the screw is not deficient in power, and as it has been shown to be equal in speed, as well as to have the advantage in power, I see no reason to think that it is not equal to the paddle.

1625. Have you given your attention to the new plan of feathering the screw instead of unshipping it?—Yes.

1626. Has it succeeded?—It has succeeded for the small ships which have gone to the Cape, exceedingly well.

1627. Does the machinery connected with that system appear to be liable to derangement?—It is so simple that I really do not think in vessels of a moderate size it can be easily deranged. Whether it will answer in very large ships I think may be doubted, because the weight of the screw may be very much increased; but this is merely a doubt. It has answered hitherto exceedingly well, and I see no reason to doubt that it will answer, if not made of too great a size.

1628. Mr. *Mangles.*] Is that the way in which the Admiralty try steamers, lashing them stern to stern?—That was the case in the trial of the "Basilisk" and the "Niger."

1629. Is that a good mode of trying the power?—I should not think it would damage the vessels; but it is hardly a fair mode of trying one power against the other, I think, because neither vessel gets way on; both the screw and the wheels have more or less tendency to churn the water out of one place, instead of going into new water at every revolution.

1630. Mr. *Divett.*] You mentioned that Captain Matthews, the commander of the "City of Glasgow," will be in command of the "Great Britain"?—Yes.

1631. Has there been any great alteration made in the machinery of the "Great Britain"?—Yes, she is now to have an auxiliary screw; she was before a full power screw steamer.

1632. Are you aware whether she has been tried under that system?—No, she has not been tried yet.

1633. In speaking of the Keeling Islands you stated that the coral reefs increased very rapidly; can you give any instances of the extent to which they have increased in a given time, say in 12 months; is the increase sufficient to make a fresh survey necessary within so short a period?—In 1836 I was shown a space of water in the Keeling Islands, within the Lagoon, where a boat could not float. I was told by the person who showed it to me, and who had lived there 25 years, that when he first came his ship lay there at anchor.

1634. Mr. *Berkeley.*] It has been stated by Captain Blackwood

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Blackwood that no material increase takes place in a coral reef in 50 or 100 years. The Committee has received evidence from Mr. Moore, a witness of great intelligence, that almost precisely the contrary is the fact; do you consider that any survey in which coral reefs might be laid down could be relied on for so long a period as 50 years, or would the rapid increase of the coral reef speedily render it of little or no value?—I think the coral reefs to which, I believe, Captain Blackwood alluded, will remain nearly the same during a very long period; he alluded probably to the solid stone-like coral of which the outer barrier is formed; I am referring to the branch coral, which grows up within the shelter of those outer reefs, particularly in the Lagoons, and in many places where there is comparatively smooth water, in which it grows like branches of trees, and very rapidly, so that in a period of 20 or 30 years it will fill up a pool in which, at the beginning of that period, there may have been two or three fathoms of water: some coral grows rapidly, and other coral, which is more solid, like stone, remains nearly in the same state for a great length of time.

1635. Would it be likely in that time to impede navigation?—Yes, I think it would in the comparatively smooth water within the Barrier Reefs, near the land, and in sheltered places, where there is nothing to break off the branches of those large corals. They grow up like trees under the water, and, in a short time, form a mass which, though soft and yielding to a ship, would still hold a ship on it like a sand bank; they are of a structure entirely different from that of a common coral reef.

1636. They are the deposit of an insect; are not they?—They are entirely the work of an insect which collects the calcareous matter from the salt water, and deposits it as shell-fish make their shells.

1637. Mr. *Mangles.*] You heard me quote a passage from your letter, to Captain Blackwood, in his examination?—Yes.

1638. That passage I need not read again, but you go on after that passage to say, "Having myself circumnavigated the globe twice, in merchant ships as well as in the command of a surveying expedition, and having traversed that delightful space of ocean above-mentioned, between Panama and Sydney, when induced by duty as well as inclination to study its peculiarities, I feel bound to add my mite towards attracting the attention of the public to the comparative advantages of establishing, by way of the Isthmus

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Isthmus of Darien, the principal line of steam communication with Australia;" do you remain of that opinion still? —No, I do not; that letter was written in September last. Shortly after that letter was written I was asked by the Secretary of the Geographical Society to draw up a paper for the Geographical Society on the Isthmus of Central America. In the course of the next two months, in investigating that subject, I found so many difficulties connected with the transit of the Isthmus; I found so many serious impediments to carrying out their line of communication from England to the Australian Colonies, that my opinion became entirely changed. Up to that time I had supposed that the Panama route was the best for general purposes, but I am quite of a different opinion now—from having examined the subject much more fully.

1639. In speaking of the speed of a screw steamer, as compared with a paddle-wheel steamer, you alluded to some steamer which had sailed out of Bristol as a proof that the power of the screw was equal to that of the paddle-wheel, because it had reached as high a speed as 13 knots an hour? —I spoke of it as an instance showing that the power of the screw was equal to that of the paddle-wheel as far as attaining a speed of 13 knots an hour.

1640. Have not there been instances of paddle-wheel steamers going much faster than that?—There have, in the case of the "Banshee" and the "Llewellyn," and perhaps two or three other ships which have been built expressly for the sake of speed, but we have never yet built a screw steamer expressly for speed. Mr. Penn, I know, would be willing to undertake to build a screw steamer to go 15 knots an hour, or rather he would make the engines, provided he were allowed to choose the builder.

1641. Those vessels which run from Holyhead have gone much faster than 13 knots an hour, have not they?—They have gone 15 knots or 17 statute miles an hour.

1642. Do you consider the "Propontis" a fast vessel?—I consider her a fast vessel. If she were well rigged and if full power were put into her she would be very fast, but she has only a small auxiliary steam power, and is very indifferently rigged. She goes from 12 to 13 knots an hour now under sail, and she goes nine knots in smooth water with an auxiliary screw alone, which is not bad; but she is not by any means as fast a vessel as could be built.

1643. Did not she leave St. Vincent one day later than the "Tay" and arrive in England four days later, coming direct,

direct, while the "Tay" had three places to call at, and was one day at anchor in the Tagus?—The "Propontis" came home short of fuel, and so light that one-third of the screw was out of the water. I found that when near her arrival at the Cape, and when near her return to England, the power of the screw was masked in a great measure by her being so light; and in addition to that, the masters of that ship never having made a distant voyage before, having only been in the Mediterranean, was not acquainted with the best manner of taking advantage of the wind; she was managed as a full-power steamer rather than as an auxiliary.

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1644. The Committee has received from one or two witnesses a strong recommendation of the long sea passage in preference to the other, on account of the advantage it gives in carrying emigrants and people of that class, who could not afford the expense of the overland passage, either by Suez or Panama; you spoke of the vessels to which you referred as being capable of carrying 100 passengers, *including* all three classes?—I said that number of passengers taking the three classes together, might be carried in one ship, such a ship as is proposed.

1645. Taking women and children, and considering that emigrants generally do consist of families, that would be a very small number, would not it?—It would not be large if the ship were merely an emigrant ship, but as she would take a large number of first-class passengers, and would take a full cargo also, it would be a considerable number in addition to her cargo and to the first-class passengers, because it is well known that the passengers who require the best accommodation would not go in any vessel very full of emigrants; there must be a moderate number only to ensure passengers of the other classes.

1646. It was insisted on as a great feature of recommendation in that line that the vessels would take the ordinary class of emigrants?—A certain number of them, but not many; the object would not be to make the ship a mere emigrant ship; they would take a large cargo and a reasonable number of first-class passengers, some intermediate, and some steerage passengers, but they would not take so many steerage passengers as to make the ship disagreeable to the others.

1647. Then there would not be so many steerage passengers as to produce any considerable effect in the way of emigration, which was understood to be a great point in favour of that route?—Certainly not; the principal object of the

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the company is not emigration; it would be merely an incidental object.

1648. It was insisted upon as a primary object by some of the other witnesses?—It would answer better to send out ships for emigration purposes alone, without cargo, and without other passengers, fitted for emigrants only.

1649. How much coal should you consider it safe and expedient to leave England with?—Six hundred tons in an 1,800 tons ship; about 500 tons in a 1,400 or 1,500 tons ship.

1650. Where would you coal on the passage?—At St. Vincent's, in the first place, and then go either from St. Vincent's direct to Bass's Straits, or to the Cape of Good Hope. At the Cape of Good Hope, coal would be taken in if necessary; but if the ship were well managed, if she were taken through the proper winds and into the proper currents, which are now well known, she need not take coal between St. Vincent's and Bass's Straits in going out.

1651. Mr. *Plowden.*] You stated that, in a steamer of 1,400 tons with an auxiliary screw, 800 tons might be appropriated to the cargo; does that include the tonnage required for water and provisions?—The 800 tons would be independent of the space for water and provisions for the crew and passengers; it would be 800 tons of clear cargo capacity, exclusive of coals, engine-room, water, and provisions for those on board.

1652. In rounding the Cape, outward bound, would not a screw steamer keep closer in to land than sailing ships generally do, in order to avoid the high seas they are exposed to in high southern latitudes?—In going out the vessel ought to keep several degrees to the south of the Cape; she ought to go into at least 40 degrees south. The sea she would find there, though high and large, is easy and regular, and would not hurt a strong vessel. A large ship of 1,400 tons would not mind the sea which she would meet in that latitude, while the advantage of having general westerly winds all the way would be very great. The fact is that all the colonial trade, almost all ships going to the Australasian colonies, follow that route; they go into about 40 degrees south, and run nearly in that parallel.

1653. Are there any currents off Cape Leeuwin; and if so, do not they set to the westward?—They set to the northwest, which is favourable for a ship making her way round Cape Leeuwin; they set round the cape and then along shore to the northward.

1654. Mr. *Cowper.*] You have estimated 64 days as the length

length of the voyage to Sydney by the Cape; what is the maximum speed which you have taken in that calculation? —Nine knots is the average; but the maximum speed would of course at times be about 12 knots. From the Cape to Bass's Straits, the greater part of the run would be made at a speed exceeding 10 knots.

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1655. Admiral *Bowles.*] Is it proposed that the steamers should always call at the Cape, or are there any which are intended to proceed the whole way, coaling only at some given point, the Cape de Verdes for instance?—The present intention is to go from England to Cape St. Vincent and coal there if necessary, and then to go from St. Vincent all the way to Bass's Straits without stopping; as that is considered the preferable course for the Australasian steamers. The Indian steamers will call at the Cape every time. There will be two distinct lines, one calling at the Cape on the way to India, another line passing the Cape without calling, and going direct to Bass's Straits, unless it should be thought more advantageous for the public interests to call at the Cape, in which case there will be no difficulty in doing so. But if the vessel calls at the Cape she will be rather longer on her passage, perhaps about six days longer in going from India to Sydney.

1656. How long would the passage be from England, coaling at St. Vincent, to a given point in Australia?—To Port Phillip the passage would be 58 days; to Sydney it would be 64 days.

1657. Is not it advisable that some more central port than Sydney should be selected for the mail steamer, and that the mail should be taken to Adelaide, Port Phillip, and Sydney by branch steamers?—By stopping at the entrance to Port Phillip (which is a very easy land fall, there being a light-house on Cape Otway, and an easy run to Port Phillip) that would answer the purpose for general distribution; and branch steamers might be maintained either by the company or by the colonies, to run from that point to Launceston for Van Diemen's Land, to Melbourne for the whole province of Victoria, and to Adelaide for South Australia, so that the large steamer could go on to Sydney. The principal reason for her going to Sydney now is, that it is the seat of Government. There is a greater command there of resources for the ship herself as well as for the engines. There is a dock in process of construction there, and it is the only one of those settlements in which there are steam factories. You may get any ordinary repair made to the engines, and

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indeed engines of a moderate size made in Sydney. As the place for the ship herself to go to, Sydney would certainly be the best rendezvous; besides which the greatest portion of the return trade comes thence and the greatest amount of the outward trade goes to Sydney at present, though Adelaide and Port Phillip are increasing rapidly. If she stopped at the entrance to Port Phillip—Adelaide, Hobart Town, Melbourne and Sydney would receive their mails within a couple of days of the same time. There might be a general distribution from Port Phillip, and a branch steamer might run across from Sydney to New Zealand, go round New Zealand, and return to meet the homeward steamer. I believe it is understood that upon the arrival of one steamer in Sydney, another which has been loading and preparing previously, would start as soon as might be convenient, say in two or three days, so that letters received might be answered immediately.

1658. Are you aware that the East India Company proposed last year that there should be a communication from Singapore to Australia, of which they were prepared to pay half the expense?—Yes, I have heard of it. My impression is, that the communication with India is a matter of necessity for those colonies, as well as the communication with Europe, but that the direct European communication is by far the largest, and, taking all interests into consideration, the most important.

1659. Would the large steamer, which did not touch at the Cape on her outward voyage, touch there on her homeward bound voyage?—Yes, she would, because in all probability between Bass's Straits and the south-east trade she would have burnt a considerable quantity of fuel, and her coals would require to be replenished at the Cape of Good Hope.

1660. Mr. *Divett.*] Are you aware of the fact that the East India Company have actually offered to pay half the expense of the communication between Sydney and Singapore?—I have no knowledge of it as a fact of which I can give any proof; but I have heard it stated.

1661. *Chairman.*] In reference to your own opinion upon the two routes, do not you think that the line by the Cape of Good Hope and the line *viâ* Singapore are perfectly distinct routes, and stand upon distinct and separate merits?—Perfectly so, and they refer to separate interests.

Martis, 6° die Maii, 1851.

MEMBERS PRESENT.

Mr. Mangles.	Mr. Willcox.
Mr. Divett.	Mr. Cowper.
Admiral Bowles.	Mr. Plowden.
Mr. Scott.	Mr. Henry Berkeley.
Mr. Stanley.	Lord Naas.
Mr. H. Currie.	

VISCOUNT JOCELYN IN THE CHAIR.

The Honourable *William Francis Cowper*, a Member of the Committee; Examined.

Hon. *W. F. Cowper*, M.P.

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1662. *Chairman.*] THE tenders for the conveyance of the mails to Australia, up to the date of the 2d of November 1848, appear not to have been accepted. The tender of that date was accepted. Will you have the goodness to state to the Committee why it was so?—This was the first occasion on which tenders for the conveyance of mails to Australia had been called for by public advertisement; and upon that occasion the usual custom was observed of accepting the lowest tender. The contract was given to the India and Australia Mail Steam Packet Company. But before that contract could be entered into it was found that that company had not sufficient resources to enable them to execute the service for which they offered, therefore no contract was entered into with them. There were two subsequent occasions upon which tenders were called for by public advertisement; but in neither case was any satisfactory arrangement adopted.

1663. Admiral *Bowles.*] What was the nature of the proposal made by the East India Company?—It is contained in the Parliamentary Paper ordered to be printed on the 9th of August 1850.

1664. In consequence of that communication from the East India Company, did any further explanation take place with respect to the terms on which the East India Company would have undertaken to convey the mail from Singapore to Australia?—No such correspondence took place with the Board of Admiralty.

Mr. *William Just*, called in; and Examined.

Mr. *W. Just.*

6 May 1851.

1665. *Chairman.*] ARE you connected with the Pacific Steam Navigation Company?—I am.

1666. What office do you hold in that Company?—I am Managing Director.

1667. You are aware that a tender was made by your company in reply to the proposals which were put forth by the Admiralty for carrying out steam communication between Panama and New South Wales?—I am.

1668. Can you state what those proposals were?—The first tender was as follows: to be performed by five screw steamers of 600 tons, and of 150-horse power each; the service to be a monthly one, for the sum of 48,000*l.* per annum; proposed rate of speed, eight knots per hour; the time to be occupied on the outward line, from Panama to Sydney, touching at Otaheite, the Bay of Islands, in New Zealand, including stoppages, 41 days and 19 hours; for the inward passage, 40 days and 6 hours. The Company further offered, in the event of that tender being accepted, to run monthly mail screw steamers in connexion therewith, between Port Jackson, Port Phillip and Launceston, touching at Twofold Bay, for the additional sum of 2,000*l.* per annum. The second proposition is contained in a paper which I have before me.

1669. When was that second proposition made?—On the 12th of February 1851 the proposition was made by letter, addressed to the Secretary of the Admiralty, dated the 12th of February 1851: "Sir,—With reference to the communication which I had the honour of addressing to you, under date 21st January 1850, accompanied by a tender to the Lords Commissioners of the Admiralty, for the conveyance of Her Majesty's mails, once a month each way, between Panama and Sydney, touching at Otaheite and New Zealand, the directors conclude from the circumstance of their being still without any intimation from their Lordships on the subject, that the said tender will come under consideration along with others which may be submitted for the performance of the service by way of Singapore. They have therefore instructed me to state that should the contract be awarded to this company, they will be prepared to commence the service within 10 months from the date of the acceptance of their tender; or if more satisfactory to the Lords Commissioners, the directors of this company would be prepared to undertake, in lieu of the aforesaid service, the conveyance of Her Majesty's mails

mails monthly, between Panama, New Zealand, and Sydney, touching at the Gallapagos and Otaheite, with screw vessels of 1,000 tons and 200 horse power, for the sum of 50,000*l.* sterling per annum; this offer to be subject, in every respect, to the same conditions as their former tender. I am, further, to transmit, for the information of my Lords Commissioners, the accompanying *pro formâ* table of sailings, with remarks as to the mode of conducting the proposed service." That is signed by myself as managing director of the company. The table I will hand in. (*The same was delivered in.*) Mr. *W. Just.* 6 May 1851. *Vide* Appx.

1670. How are your distances taken, according to the course which a steamer would run, or the direct course?—The latitudes and longitudes are taken from Draper's Practice of Navigation. We take the course which a screw steamer should take, obtaining the advantage of the trade winds and currents the whole way.

1671. On both voyages you propose to touch at New Zealand?—Yes.

1672. Where do you propose to stop on the outer passage?—At Taheite first, then at the Bay of Islands, and then on to Sydney. On the return passage we come through Cook's Straits. In the proposition to the Admiralty we did not propose to touch at Cook's Straits; but now I have another proposition to lay before the Committee, which, with their permission, I will state.

1673. Will you state in what the new proposal differs from the former one?—It is in the homeward course only. We leave Port Jackson and come on to Port Nicholson, Cook's Straits, and straight on to Panama, according to the dotted line which will be seen upon the chart before the Committee.

1674. Admiral *Bowles.*] Not coaling anywhere between New Zealand and Panama?—It will be quite unnecessary to coal anywhere between Port Nicholson and Panama.

1675. *Chairman.*] You do not intend to touch at Easter Island?—No.

1676. Admiral *Bowles.*] What was the object of touching at Gallapagos?—That we might have a reserve of fuel there in case of its being required.

1677. In whose possession is Taheite now?—I believe in the possession of the French.

1678. Do not you think that that might be a serious obstacle in your way?—All our coaling stations on the west coast are now in the hands of the different republics; we do not coal anywhere on British territory.

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1679. Have you any reason to hope that the French would permit a coaling station to be made there?—I have not the least doubt but that they would be very glad to see it.

1680. *Chairman.*] Have your company been in the habit of printing their accounts?—No, they never have. In terms of a resolution of a general meeting they are exhibited only to the proprietors.

1681. Have you any objection to state what the capital of the company is?—Our capital is 240,000*l.*, of which there is called up 140,000*l.* The capital may be increased to 1,000,000*l.*, with the consent of the Lords Commissioners of the Treasury. I may explain, with regard to the books, that only last year, previous to the renewal of our West Coast mail contract, they were all examined by the Admiralty.

1682. Are the Pacific Steam Company now the contractors for the conveyance of the mails of Her Majesty on the west coast of America?—Between Panama and Valparaiso, touching at 34 intermediate ports.

1683. How long has that contract to run?—It expires in April 1852.

1684. Have you brought for production to the Committee the documents enumerated in the communication addressed to the secretary of the company, under the date of the 10th of April?—I have, with the exception of the accounts, which we do not publish. This document is a statement of details respecting the Pacific Steam Navigation Company, ordered by the Chairman of the Select Committee on Steam Communication with India. (*The same was delivered in.*)

Vide Appx.

1685. What is the tonnage of the vessels employed by the Pacific Steam Navigation Company?—There are four vessels; two of them are of 683 tons, the third of 450 tons, and the fourth of 509 tons register.

1686. Are they paddle or screw steamers?—Paddle steamers; the first two are of 180-horse power each, the third 220-horse power, and the fourth 262-horse power. The average speed of those vessels I have extracted from their logs; it is for the six months ending December last, 7 $\frac{5}{8}$ths knots per hour; latterly the average has somewhat exceeded eight knots per hour. The distance run for six months, to the 31st December 1850, under contract, was 37,608 miles. Perhaps I may explain that on the expiration of the present contract in April next, we commence a semi-monthly mail service on the west coast of South America. The distance to be steamed under that new service will be 75,216 miles. Four additional vessels are in course of construction

struction for the west coast mail service. They are to be four steam ships of 1,100 tons, and 400-horse power each. Mr. *W. Just.* 6 May 1851.

1687. Mr. *Mangles.*] Where are they being built?—In Glasgow.

1688. *Chairman.*] Has the mail service performed by your company been hitherto satisfactorily performed?—With undeviating regularity. I think Mr. Worth, who was examined before the Select Committee which sat in 1849, stated that there had been no complaints, and since that time the service has been equally well conducted.

1689. The Pacific Steam Navigation Company run in connexion, do they not, with the West India Royal Mail Steam Packet Company?—They do; passengers and bullion are landed at Panama and conveyed across the isthmus to Chagres, and there shipped on board the steamers of that company. We have through-rates of fares, a table of which I now also produce. (*The same was delivered in.*) *Vide* Appx.

1690. How have you calculated the number of days which the auxiliary screw steamers which you propose to run between Panama and Sydney will take in making the outward passage?—I have calculated the speed at 8 ½ knots per hour. I have a table before me, showing the distance in miles, the number of steaming days, and also the amount of coal consumed at the rate of 9 ½ lbs. per horse power per hour. The whole quantity of coal required for the outward run would be 770 tons; inward, 769 tons. (*The same was delivered in.*) *Vide* Appx. The vessels would be quite capable of carrying at least 800 tons of coal and 200 tons of cargo, so that we have plenty in reserve. Under the table I have put in, each screw ship would in succession have a lay-up or rest of one month at Panama for overhaul or repair, and the mail service with England would be performed thus: from Southampton to Chagres, by the new ships of the Royal Mail Steam Packet Company, 19 days; from Chagres to Panama I allow three days; when the railway is completed we shall be able to do it in one day; from Panama to Port Jackson, including intermediate stoppages, 41 days 6 hours, making 63 days and 6 hours from England. Then the return voyage from Port Jackson to Panama would be 39 days and 16 hours; from Panama to Chagres 3 days, that is, for the Isthmus; from Chagres to Southampton 19 days, the whole return voyage being 61 days and 16 hours, making on the round voyage 124 days and 22 hours, which does not include the stoppage at Port Jackson. The time occupied between England and New Zealand under this arrangement would

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be outwards 55 days and 32 hours; homeward 54 days and 16 hours. By the vessels now proposed, fuel sufficient for the run might be carried in addition to 200 tons of cargo, even were it necessary to keep them under steam during the whole of the time. The company have already a coal depôt at Panama, and reserves in case of need may be kept in store at Otaheite, Bay of Islands and Port Nicholson. With reference to the proposed speed of 8 ½ knots per hour, the directors of the company are assured by competent authority that in the waters of the Pacific an average of 9 knots may safely be calculated on.

1691. You have stated that the time taken from Southampton to Chagres would be 19 days; is that the time now taken by steamers in performing the voyage?—No, I think they take 23 days at present, but with the new steamers the company intend to make the passage in from 18 to 19 days.

1692. Mr. *Mangles.*] Are they under contract to do it in 19 days?—I am not certain whether it is stipulated in the contract, but I believe there is no doubt that they will accomplish it.

1693. What is the average time now occupied in crossing the Isthmus of Panama?—The average time may be stated for passengers at one to two days; for bullion two days are required.

1694. Are you aware of the arrangements made by the United States with the state of New Granada for opening a line of railway across the isthmus?—I am.

1695. Will you state to the Committee briefly what those arrangements are?—I have before me a chart of the isthmus with the railway laid down upon it. I have also in the first place a charter from the legislature of the state of New Granada; the names of the directors are given. "The basis of the company's operations is a grant or exclusive privilege from the republic of New Granada to William H. Aspinwall, John L. Stephens, and Henry Chauncey, for the construction of a railroad across the Isthmus of Panama. Among the provisions are the following; viz., an exclusive right to construct a railroad across the isthmus, with the right to use gratuitously all the public lands lying on the route of the road." Eight years are given, if required, for completing it; 12 hours for transport over it; they are bound to make the road so as to be able to transport goods and passengers across in 12 hours. It will be seen that the only obligation imposed as to the character of the line is, that it should be capable

capable of transporting passengers and merchandise from one ocean to the other within the space of 12 hours.

1696. Lord *Naas.*] What is the distance?—It is about 46 miles. There is "a gift of about 300,000 acres of land, to be selected by the grantees from the public lands on the isthmus. Iron, and all implements and materials for the road, provisions and other articles for the persons employed thereon, admitted free of duty. Two ports, one on the Atlantic and one on the Pacific, are to be the termini of the road, and to be free ports. There is power to levy transit and warehouse duties, and to establish such tolls as the grantees may think proper. The privilege to endure 49 years, subject to the right of New Granada to redeem it at the expiration of 20 years after the completion of the road, on paying 5,000,000 dollars; at the expiration of 30 years on paying 4,000,000 dollars; and at the expiration of 40 years on paying 2,000,000 dollars. A deposit is to be made of 600,000 francs (about 120,000 dollars) as a security for the fulfilment of the obligations assumed, to be refunded with interest on the completion of the road; two and a half per cent. to be paid to the government of New Granada upon all dividends declared." The result of the survey is as follows: "Whole length from sea to sea, not exceeding 46 miles; summit level, under 300 feet; curvatures, with no radius less than 1,500 feet; grade for about 26 miles, from Atlantic to the Chagres River, nowhere exceeding 12 feet per mile; from Chagres River to summit level, about 10 miles, nowhere exceeding 20 feet per mile; from summit level for about three miles, nowhere exceeding 50 feet per mile; and thence descending about seven miles to the Pacific. Materials of stone and timber are abundant and of good quality; and there is an excellent harbour at Navy Bay, six miles distant from Chagres."

1697. *Chairman.*] From what have you been reading?—From the prospectus which the company first issued. I will now read from the last report which was issued about six months ago. "To the Stockholders of the Panama Railroad Company. The directors have much satisfaction in laying before you the new contract, negotiated with the republic of New Granada at the last session of its Congress, containing important alterations and amendments, and giving great additional facilities for the railroad enterprise. In laying this before you they avail themselves of the opportunity to contradict formally, and in the most positive terms, the reports which have been circulated through the newspapers and otherwise of their intention to abandon the work of

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of the railroad, and to say that there is no foundation whatever for any such reports; on the contrary, they have the satisfaction of assuring you that the road is progressing under circumstances which induce them confidently to expect that it will be opened for travel from Navy Bay to Gorgona (about 27 miles) by the 1st day of July next. The remainder, about 19 miles, and extending to the Pacific, it is their intention to make passable for locomotives by the 1st day of July 1852. Any information respecting their plan and proceedings will be communicated on application at the office of the company, 78, Broadway." The directors are named, and it is signed by the president, John L. Stephens. I may also mention to the Committee, that the manager of our own company, in order to be able to report to the directors at home, went over the route in the month of February, and I will now read an extract from his letter which I hold in my hand. This is the report which he sent home to the Board; it is dated the 9th of February 1851. He says, " In reference to my visit to Limon Bay, and investigation into the present state and prospects of the railway, I may mention that I embraced an opportunity of going with the California specie, and seeing for myself the actual state of things. I had proposed to have made up a good presentable paragraph which you might have sent to the newspapers. I believe the fact that there is no longer a doubt of the Panama Railway being completed, and that the work is going vigorously on, might be used as a strong argument in the matter of the Australian contract business. The engineers expect confidently to have the road opened to Gorgona in August or September next. This entirely does away with that great bugbear the Chagres River." That completely confirms the previous report. I have here also an extract from a copy of a letter which was cut out of the Journal of Commerce. In reference to the Panama Railway, the editor says, " We are happy to lay before our readers the following extracts of a letter from John L. Stephens, esq., president of the Panama Railroad Company, to Francis Spies, esq., secretary; it is a familiar letter, evidently written without the remotest view to publication, but in some respects the more interesting on that account. It appears that there are not less than 900 men now at work upon the road, and that there is a prospect of completing it from Navy Bay to Gorgona (26 miles) by the 1st of July next." All the accounts confirm that fact. " When this is done, the distance between the two oceans can be accomplished in one day. Moreover, the dangers and toils of Chagres River will be entirely

entirely avoided. For several miles from the Atlantic depôt the rails are already laid; this depôt is situated on Manganilla Island, in Navy Bay, which is connected with the main land by a causeway built for the purpose. The cars will receive passengers and freight directly from the wharf, to which vessels drawing 20 feet water will soon be able to come up. On the whole, the company's works are moving forward with great efficiency and success. It will be an era in the annals of travel when the isthmus can be traversed with comparative ease and comfort in one day. The distance from Gorgona to Panama is 20 miles." There appears to be a difference of a mile in point of distance. The letter of Mr. Stephens is as follows; it is dated, "Navy Bay, April 2d, 1851:—My dear sir, On the score of health, the hospital at this place is laughing at the doctors; I walked through it this afternoon, and found but one man in it, and he a sailor, from one of the vessels in the harbour, with a broken leg. At Gatun there are only some five or six, at Bavio Soldado there are some 20 of Baker's men, and at Miller's station not a man. Since the last clearing out there has been no accumulation, and the line is almost exempt. You are no doubt curious to have a great many particulars, but I have been already full of consultations and business, particularly in the great matter of getting together a large native force, and have done so much in various ways, that it is a burthen to write more than is absolutely necessary. I will therefore merely say, that after surveying, as we approached it, with much satisfaction, though with bunged-up eyes, the changed condition of the desolate spot I had left in July, I had the great satisfaction of stepping from the deck of the Gorgona, upon a fine pier 250 feet long, and which, with a-L now making, will soon reach 20 feet water, and the cost will not be half as much as that of the launches we refused to send. I have since found that the whole business of the island is well systematised and arranged. Order inside of the houses and out; materials are piled up in order; general harmony, contentment, and attention to duties, and as good organization and system as if the work had been three years instead of three months under way. Defective pile-drivers and other causes have retarded somewhat the actual road, but the elements of rapid progress are all here, to be brought out by a lighter touch than could ever have moved them before And I say now, with stronger faith than I have ever yet felt, that if we will only bend to our oars for three months more, we shall have no more oars paddling in troubled waters. We have now on the ground a force of

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of 900 men; Mr. Totten says, if it can be kept up effectively to that number, we will get through by the 1st of July to Gorgona; and I think if we do not keep the number good, it will be because the world is scant of people. General Camp will keep up his recruiting station, rejecting every man not positively healthy, even if he sends but 20 or 30 a trip, and taking care always to have one man on board as a sort of foreman, with a list of the men, and to watch that they do not run away. Contract for six months; never mind the rainy season; there is no reason to stop work. We shall send Taresdale or some other proper person to New Orleans. The men, I have no doubt, are now better provided than on any railroad in the United States, and this must be kept up." What I have now read establishes the following: that this railway from Navy Bay as far as Gorgona will at all events be completed in all this year, and to Panama in 1852. Therefore before the proposed mail service could be commenced the difficulties of the Chagres River will be entirely obviated, and 27 miles of the railway in operation, leaving only about 19 miles to make. The land part of the journey is so far unexceptionable; but even that will soon, say in six or nine months after the commencement of the service, be superseded by the railway, when the time would be reduced for crossing the isthmus to six or 12 hours; thus reducing the time between England and Sydney to something under 60 days.

1698. Have you any mode of calculating the number of passengers, and the quantity of goods which have come across the isthmus during the last 12 months?—I have been looking to the returns in the Panama papers, and also in the United States papers, and I am perfectly safe in saying that 800 passengers a month, and from 3,000,000 to 4,000,000 dollars monthly pass across the isthmus; that is, taking in what goes to New York, and what is brought from Chagres to England by the packets of the Royal Mail Company.

1699. Is there any considerable quantity of goods transported across?—I have another extract from the same letter in reference to the quantity of goods. At present the cargo is very inconsiderable to the west coast, but the manager of the company says in reference to goods for San Francisco, "I think it is now clear that Panama will become a very important place upon this west coast. As soon as the railway is through I believe we shall have a great influx of American manufactures from the south; goods are now brought across the isthmus, and sent by steam to California, encountering first the heavy expense of transit from Chagres to Panama, and

and the further freight from Panama to California of 100 dollars per ton." I have already stated that the neutrality of the isthmus is guaranteed by the government of the United States, and in the prospectus which was issued it is stated that, "The president, in his message, communicating to the senate for its ratification the treaty with New Granada, expressed the belief that the governments of England and France would join in the same guarantee, and from other sources there is reason to suppose that such belief was well founded." Mr. *W. Just.* 6 May 1851.

1700. Have you any grounds for expecting that any great quantity of goods will be forwarded by the Panama route for Australia?—I do not expect that there would be any great quantity, at all events, till the completion of the railway. Then I think we ought to have a considerable quantity of valuables, such as plate and bullion, and the finer descriptions of merchandise. I think with those exceptions the cargo part of our traffic would be very inconsiderable.

1701. Upon what will the line chiefly depend for revenue?—On the passenger traffic.

1702. What do you calculate will be the cost of the passage for a first-class passenger from Panama to Sydney?—We have arranged that the fares shall not exceed 105*l.* for the first-cabin, and 50*l.* for the second cabin fare.

1703. Does that include the passage of the isthmus?—Of course, and provisions.

1704. Cannot you state the separate fare from Panama to Sydney?—That is a matter of detail between the two companies; it is a mileage rate throughout. The fare from Panama, after deducting the allowance for keep, will be about 58*l.* 5*s.* for the first cabin, and 23*l.* 6*s.* for the second cabin.

1705. Mr. *Mangles.*] Will it be the same backwards and forwards?—Yes; of course to New Zealand it will be less, corresponding to distance.

1706. *Chairman.*] By that proposition your line will terminate at Sydney, will not it?—Yes; but I hold in my hand a letter from the representatives in this country of the Hunter's River Steam Company, which I will read to the Committee, with their permission.

1707. Is it addressed to your company?—It is addressed to the Directors of the Pacific Steam Navigation Company, and is dated 3 May 1851:—"Gentlemen,—With reference to the interview which I had with you on the subject of the intercolonial mails, in connexion with the mail steam lines from England

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England to New Zealand and Sydney, as proposed to be carried out by way of Panama by your company, I have to state, that after having maturely considered the question, along with Messrs. Armitage, Brothers, joint agents in this country for the Hunter River Steam Navigation Company, I hereby undertake, on the part of that company, the conveyance of the intercolonial mails, providing for a return of post from the undermentioned places, namely, Maitland, Hunter River, Brisbane, Moreton Bay, Twofold Bay, Hobart Town, and Port Phillip, in the event of the Panama route being adopted, and provided that your steamers have a rest or stoppage of eight days at Sydney. In connexion with the foregoing subject, I may state that the Hunter River Company have already a fleet of seven steam ships in the colonies, and are at present building under my inspection in the Clyde three additional vessels, to which the contractors guarantee a speed of 10 knots an hour, deeply loaded. In conclusion, I have to refer you to the accompanying tables, and beg further to state that I shall be prepared to prove before the Select Committee of the House of Commons now sitting, the practicability of the undertaking, in so far as respects the intercolonial mail service, when required." He then says, in a postscript, "It will be perceived that Adelaide is not included in the accompanying tables. The course of post with that colony would be one month later." The tables referred to by Captain Mackison I hold in my hand. He gives the distance from Sydney to Newcastle, Hunter's River, as 70 miles. That he does at the rate of nine miles per hour in eight hours. It will be observed, however, that by his letter he has a guaranteed speed of 10 knots for the new vessels building. To Maitland the distance is 30 miles, which is done in four hours. He accomplishes the whole of that work, including stoppages to and from, in three days and two hours, giving two days for answering letters. Then I go on to his second table. From Sydney to Brisbane, in Moreton Bay, the distance is 540 miles: that he does in 2 days and 12 hours; he allows 1 day and 12 hours for answering letters; returning home and making the voyage complete in 6 days and 12 hours. I then go on to the south route, which is from Sydney to Hobart Town. The distance is stated at 628 miles; that he does in 2 days and 22 hours; he allows 1 day and 12 hours for stoppages there, and returns and makes the round in seven days and eight hours, being a day and four hours sooner than required at Sydney; so that the stoppage might be

be increased from 1 day and 12 hours to nearly two days. The second table of the southern route is from Sydney to Twofold Bay and Port Phillip. From Sydney to Twofold Bay is 218 miles, which he does in one day; he remains there six hours; goes on to Port Phillip, 367 miles, in 1 day and 17 hours; he allows 1 day and 12 hours stoppage at Sydney: the distance to and from is again completed in 7 days and 10 hours, being one day and two or three hours sooner than we require the mails to reach Sydney. In those cases the time for answering letters might be increased from 1 day and 12 hours to about two days. (*The Table was delivered in*). Mr. *W. Just.* 6 May 1851. *Vide* Appx.

1708. Lord *Naas.*] It is not proposed to connect the western settlements, is it?—It is not. Steamers would run to the western settlements, but the replies to letters would not reach home till the steamer of the following month.

1709. *Chairman.*] Are the calculations of time in that paper taken from the rates at which the vessels at present run?—I believe so. The new steamers building are guaranteed to go 10 knots an hour fully loaded, but they are taken only at nine knots here. According to the tables now submitted the mail service with England would be as follows: from England to New Zealand the time on passage would be 56 days and 8 hours; the time for answering letters would be 22 days and 10 hours at New Zealand; to Port Jackson the time out would be 63 days and 6 hours; the time for answering letters there would be 8 days and 12 hours; to Newcastle (Hunter's River) and Maitland the time would be 64 days and 8 hours, and 65 days, giving at each of those places 2 days and 4 hours for answering letters; to Brisbane (Moreton Bay) the time would be 66 days and 12 hours, allowing 1 day and 12 hours for answering letters; to Twofold Bay it would be 65 days, allowing 5 days and 11 hours for answering letters; to Port Phillip it would be 66 days and 23 hours, allowing 1 day and 12 hours for answering letters; to Hobart Town 66 days and 22 hours, allowing 1 day and 12 hours for answering letters. The time for answering letters would be increased provided the higher average rate of speed, of 9 knots an hour, was attained in the Pacific.

1710. Have you made any calculation of the number of passengers which you expect to carry by your line?—Yes; but unless the Committee press for that information, which is a mere matter of detail, I should prefer not giving it till we

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we are assured that provided the route be approved of we shall have the contract.

1711. Do you contemplate taking any inferior class of passengers besides the intermediate and the first class?—We do not, except between New Zealand and Australia. We expect a considerable traffic there, and we shall have a rate of fare which will not exceed 15 *l.* It may be something under that amount, but that will be the maximum. Sailing vessels now, I think, charge 10 *l.* from New Zealand to Sydney, and *vice versâ*.

1712. You rely exclusively upon the better class of passengers and the intermediate class?—Yes, and also upon the traffic between New Zealand and Sydney. We expect a considerable traffic between the west coast and Sydney, and New Zealand also.

1713. You do not propose to take steerage passengers?—No, except between New Zealand and Australia. We have not fixed the rates of fare, but 15 *l.* would be the maximum. We should very likely find it to be to our advantage to lessen rather than increase those rates.

1714. Are you satisfied that there would be no difficulty in regard to coaling in those long distances?—None. The ships now proposed could, were it necessary, carry coal sufficient for the whole distance from Panama to Port Jackson, besides 200 tons of cargo, in addition to passengers and stores. It will be observed, that between 9 and 10 lbs. per horse power per hour (20 tons per day) has been allowed for the consumption of the vessels, which, with engines of multiplying power, is quite ample.

1715. You have already a coaling establishment at Panama, have not you?—Yes, and an agency there. We are also constructing a gridiron at Panama; and I think it very likely, provided the contract were awarded to the company, we should remove our head-quarters from Callao to Panama.

1716. What rate per ton does the coal cost you at Panama at present?—At about 55*s.* 6*d.* a ton we are able to put it on board the steamers.

1717. Admiral *Bowles.*] Where does it come from?—We send it out from Cardiff, in Wales.

1718. It is all English coal?—All English coal; at least, the greater part of it.

1719. *Chairman.*] Have you made any calculation as to the probable price per ton of coals at Otaheite, the Bay of Islands, Port Nicholson, and Port Jackson?—Coals might cost

cost us about 30*s.* or 2*l.* at Otaheite; at the Bay of Islands and at Port Nicholson they would cost us about 20*s.*; at Port Jackson we might safely calculate on coaling at 15*s.* a ton. Mr. *W. Just.* 6 May 1851.

1720. Lord *Naas.*] Is that the calculation for English coal or Australian coal?—For Australian coal at Sydney, at New Zealand, and at Taheiti. It must be remarked, however, that we do not expect to have to coal at Taheti; we should only absolutely require to coal at the Bay of Islands, Panama, and Sydney.

1721. Mr. *Mangles.*] You would have a depôt of coal there for security?—We should.

1722. *Chairman.*] Can you give the Committee any recent intelligence as to the trade or extent of shipping between New South Wales and California?—I can; I have before me the Shipping Gazette and Sydney Trade List, dated January the 4th, 1851. The number of vessels reported to be expected in Sydney from Moreton Bay is 6; from Port Phillip, 7; from Whitby, 3; from Launceston, 1; from Adelaide, 1; from New Zealand, 3; from California the number of vessels expected at Sydney is 22; from China, 3; from the South Seas, 11; from Panama, 2; and from Manilla, 2. I find the number of vessels loading in Sydney and Newcastle for California very considerable, and by the same paper the number expected at Sydney from that port was no fewer than 22. From New Zealand, the South Sea Islands, and Panama, the number I find is 16; thus making in the aggregate no fewer than 38 vessels expected at Sydney from California and the west, whilst from Manilla and China only five vessels are entered as expected. It does not appear that at the date referred to any vessels were expected at Sydney from any part of India. I have only analysed some papers in reference to the passenger trade. In the first place, however, the Committee will perhaps permit me to state with respect to New Zealand, that according to Mr. Montgomery Martin, the amount of exports from Sydney to New Zealand in 1848 was 163,938*l.*, being about one-sixth of the value of those from Sydney to Great Britain, and about four times the amount of the exports from the same colony to India and China. I find also from the "Sydney Morning Herald," that there are almost daily arrivals and departures between these colonies. I will now read from a paper dated December 31st, 1850. By that paper I find there are no fewer than seven vessels advertised as laid on at Sydney to sail for New Zealand.

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1723. Mr. *Mangles.*] Is there any list of vessels laid on for California?—I find 11 vessels laid on for California.

1724. *Chairman.*] Have you adopted any means of ascertaining the views of the colonists as to the western or Panama route for the purposes of the mail service?—I have not otherwise than by inquiry of those of the colonists who are now, or have lately been resident in this country; and I believe that the majority, especially of those connected with New South Wales and New Zealand, are favourable to it. I may safely say that the western route, at all events until lately, has not been before the colonists in the tangible shape now submitted. In fact, the colonists, as I understand, have been so far misinformed on this subject, as to have had it represented to them by a report emanating from the committee of the Australian Steam Association, that 90 days would be required for the performance of this route.

1725. Mr. *Mangles.*] From whom did that statement emanate?—From the Association for the Promotion of Steam Communication with Australia; 90 days was stated as required to perform the distance between England and Sydney. Perhaps you will allow me to explain that I have analysed the papers before me with reference to the number of passengers, and I find that the number leaving Sydney for San Francisco was as follows: On December the 31st the "Lanark," an American vessel, leaves with 39 passengers.

1726. For what port are those passengers bound?—Those are departures from Sydney for San Francisco. The "Rosalind" leaves on the same day with three passengers. On the 3d of January there is the departure of the "Henry Keeling" with three passengers. On the 4th there is the departure of the "Ralph Bernal" with 19 passengers. Thus in four days we have the departure from Sydney for San Francisco of 54 passengers. The arrivals appear in November 1849 or 1850 I believe to be 35. In reference to passengers to New Zealand from Sydney, I have here a list of the departures from Sydney. On December the 28th the "William Hyde" left with three passengers. On the following day the "Kirve" left with six passengers. On January the 4th the "Lucy James," with two passengers; and on the same day the "Mankin" with 10 passengers. Thus in four day 21 passengers departed from Sydney to New Zealand. As to arrivals, I find that in two days, the 28th and 29th of December, the "Emma" arrived with two passengers, the "Sarah" with four passengers, the "William Alfred" with five passengers, making 11 arrivals at Sydney from New Zealand in two days.

1727. *Chairman.*]

1727. *Chairman.*] Will you briefly state to the Committee the favourable points which you consider to attach to your route over the others?—The advantages of the Panama route appear briefly to be as follows: First, it is the speediest, the most comfortable, and the most certain in regard to regularity, whether viewed as a postal or as a passenger route between England and those colonies, points which must be considered of paramount importance. Secondly, it embraces, not only without detriment, but with advantage to the other Australasian colonies a mail service between the mother country and New Zealand, a colony second only in importance to New South Wales. Between these colonies there is a very considerable commercial intercourse greatly on the increase, which would be promoted and matured by the adoption of the Panama route. Besides it may be noticed that in reduction of the expense to the Imperial Treasury, the government of New Zealand have, as I understand, offered the sum of 1,500*l.*, which it is believed would be doubled were such a service carried out efficiently. In the fourth place, the Australasian colonies would thereby be brought into direct and regular intercourse with South and Central America, Mexico, California, the West Indies, and North America, facilities being thus afforded for commercial connexions with those important and rising countries, which would, it is believed, more than compensate for the loss of any additional impetus which might be anticipated to the trade between the colonies and India and China from the adoption of the Singapore and Sydney line. From the foregoing considerations it may safely be argued, that were the merits of this route fairly brought before the colonists in the tangible shape now presented to this Committee, they would gladly give it the preference. Of the many political advantages of this route, the following may be noticed: First, an increased occupation by our steam fleet of the waters of the Pacific, tending to the greater encouragement of British enterprise, and the better protection of British interests in that part of the world, thus placing a barrier to further encroachments on the part of foreign rivals. Secondly, the opening up of an additional route to India and China if in the event of war the Isthmus of Suez should be closed against this country."

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1728. Have you anything further to state to the Committee on this subject?—I have a letter from Mr. Napier, the engineer, consulted by the directors, as to the probable speed of those steam ships; it is addressed to myself, and is dated

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Glasgow, 6th February 1851. Mr. Napier says:—"I feel at a loss how to apologize for my neglect, in not having answered your esteemed letter of the 30th ultimo, which my son had reminded me of a short time before the receipt of a telegraphic message. If I remember, I got your letter along with a number of others in a parcel; for on looking for it this day, I discovered it within another letter. I am of opinion, that properly constructed screw vessels of 1,000 tons and 200-horse power will make most excellent steamers for the Australian trade; and from all that I hear or have heard of these seas, I have no fears of securing an average speed with these vessels of from 8½ to 9 knots; the dead weight of 800 tons of coal and 150 tons of cargo, besides weight of machinery and stores, is certainly no small burden for such a tonnage and power, but still I have no fears of the result, under anything like ordinary weather; 1,200 tons, and 250-horse power would have placed the matter beyond all doubt; for in such a trade, where regularity is of the greatest importance, and where the voyages are long and a prospect of the trade increasing, I have always found it in the end to be the best and cheapest to be rather above than below the mark at starting any new trade; still the sizes and power named by you I have no fear of answering the purpose required." Perhaps here I may be allowed to read an extract from a letter from another nautical man of great experience, Captain Hamond, of the Royal Navy. He says, in a communication addressed to the editor of the "Times," "One of the questions which at present occupy attention in England is that of steam communication with New South Wales and New Zealand; on this interesting subject I have lately read in the public prints some excellent letters, more especially one from Captain FitzRoy, of the Royal Navy, in the 'Times' of the 12th of September last; and conceiving it to be a duty incumbent on every one possessed of information on matters of such general interest to give it to the public, I am induced now to send you a few remarks of my own, in the hope you may deem them deserving of public attention. I should not thus enter upon the subject did I not believe myself to be somewhat fitted for the task by an experience of many years in all parts of the globe, and by having had the charge, for a lengthened period, of a man-of-war steam-vessel in the Pacific Ocean. The principal point, I presume, to be discussed in this question is the attainment of the most rapid, economical, and regular conveyance between this country and New South

South Wales and New Zealand, consistent with a due regard to the comfort and safety of the passengers." He says, "Four routes are at present under consideration, viz. that by the Red Sea and Torres Straits to Sydney (New South Wales); that by the Red Sea and by the westward of Australia to Sydney; that by the Cape of Good Hope to Sydney (the present ordinary route); and that by the Isthmus of Panama to Sydney, touching at New Zealand." I will not read the whole of the letter, but only that part which refers to our own route. He says, "Referring to Captain FitzRoy's admirable letter in the 'Times' of the 12th of Seeptember, and to his remarks upon the advantages to be derived by the adoption of this route, I would here, as one of the many navigators who have derived the greatest comfort and satisfaction from his correct surveys and remarks on the South Seas, offer him the testimony of my respect, and further express my conviction that any opinions from him are entitled to great consideration. I know only of one objection to this route" (that is, the route by the Isthmus of Panama), "an objection doubtless which will equally apply, and certainly in a far greater ratio, to that by the Red Sea and Suez. The advantages of the route in question are many and great, and I may especially refer to the certainty that, with the amount of attention at present being directed to Central America, the traffic across all that region will soon be conducted with perfect ease and celerity. Throughout the entire range of this route across the vast Pacific Ocean, both going and returning between Panama, New Zealand, and Sydney, fine weather, smooth seas, and a pleasant temperature almost everywhere prevail, and the trade winds, generally speaking, blow with such gentle force and constant regularity, that the seaman acquainted with them is enabled even at the present time to shape his course from port to port with certainty and confidence; thereby enabling him, even without the advantage of steam, to calculate upon his arrival with accuracy and precision. 'Persons' (I quote from Captain FitzRoy's letter) 'who are conversant only with European, or even Atlantic steam voyages, scarcely realize to themselves sufficiently the long runs that are made in trade winds or in the Southern Ocean, under sails alone, when for weeks together no steam-power is required. It is in such extensive tracts of ocean that the screw steamer will be most advantageous.'" Captain Hamond says, "The vessels best adapted to navigate this ocean would be powerful bark-rigged ships of 1,700 or 1,800 tons, fitted with an auxiliary

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screw of 450 or 500-horse power. Such vessels would attain an average speed of nine knots an hour, and, with one relay for coaling, would make the voyage from Panama to Sydney in 40 days." He says, "In carrying out this scheme it would be necessary to have three first-class stations or depôts for coals and stores, presided over by responsible persons, in whom every confidence could be placed." Then he goes on to say, "In looking upon the advantages of establishing a line of steam communication to New South Wales by the Panama route, the important point must not be overlooked of its being a resource in the event of any interruption to our communication with India by the Isthmus of Suez; a point indeed which I consider ought to form matter of the highest consideration. One powerful company at present connects us by steam with India and China *viâ* Suez; it is our policy to encourage the formation of a similar one to unite us with our rapidly rising colonies in New South Wales and New Zealand, by a different route." He says, "The distance by this line is shorter than that by any of the others, namely, 12,690 miles; and the time calculated to perform the passage is 62 days, which I think may probably be still further reduced." I may here also state, that I believe Captain Chappell, of the Royal Mail Steam Packet Company, and Sir Edward Belcher, agree with me that nine knots an hour may be obtained. Consequently, if we get 9 knots instead of 8 ½, as estimated by these tables, we shall be able to give an additional four days for answering letters at Sydney, six days at Port Phillip, and six days at Hobart Town, which would be very important. I have only taken my speed at 8 ½ knots an hour; should we increase it to nine, it will make a difference on the outward and homeward voyage of between four and five days.

1729. Are you aware what has been the experience of Captain Hamond; has he had much experience in those seas?—Yes, he has had very considerable experience, I believe.

1730. Mr. *Cowper.*] When Captain Hamond proposed that the vessels should be of 1,700 tons and 450-horse power, was he aware that you proposed to keep up that speed with vessels of only 1,000 tons burthen and of 200-horse power? —It does not appear that he was aware of our having made any tender to the Admiralty for the performance of the service. I would notice that our steamers of 1,200 tons and 200-horse power can be wrought up to 300-horse power in the event of extra power being required.

1731. As

1731. As far as Captain Hamond's authority goes, it would not be in favour of your being able to keep up that speed with vessels of 200-horse power?—The proportion of power to tonnage which he proposes is rather better than 1 to 4; our steamers will work beyond 200-horse power if necessary; we should have vessels of 1,200 tons with 200-horse power nominally, but virtually of 300-horse power if required. As to the size of the ships being 1,700 tons, I do not see the use of such a vessel in the waters of the Pacific.

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1732. What is the proportion of 450 to 1,700?—It is about 1 to 4; in our case we should have that proportion. Our engines are nominally of 200-horse power, but could be brought up to 300-horse power. But Captain FitzRoy states in his letter that two-thirds of the whole distance could be done under canvas alone without steam; I presume therefore that any great increase of power would be worse than useless, only tending to exclude cargo, and give additional weight of machinery.

1733. I presume if you made a contract you would engage to go at a particular rate of speed, and if you found that your vessels were not able to obtain that speed with the power you mentioned, you would engage to have more powerful vessels which should attain the speed?—Decidedly; I have no doubt of this, that the service as proposed could be undertaken and performed considerably within the time named. In the first place, we should have a saving of time in the Isthmus of Panama; I have allowed three days there; we should have two days saving there; if we attained a speed of nine knots an hour we should have a saving of upwards of two days out and two days home. In reference further to the speed of screw vessels, I have here the log of the steam ship "Arno." I will read an extract from a letter from the commander of that ship, addressed to myself. He says, "I have great pleasure in handing you the enclosed abstract of the steam ship 'Arno's' log under my command. The passage previous to these she left during that severe weather, same time as the 'Jupiter' paddle steamer broke down, and several steamers leaving same date put back; the 'Arno' arrived in Gibraltar in 8 ½ days uninjured. Having myself been in all the large Cunard paddle steamers I had a prejudice against screws, but these passages must convince the most sceptical of their great steaming and sailing qualities." The size of the "Arno" is I believe 750 tons, and the power 150 horses. He states that the consumption of fuel, Cardiff coal, with 58 strokes of the engine, is 14 cwt. per hour, being at the rate of 10 lbs. per

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horse power per hour. This, the Committee will observe, is not multiplying power. Ours would go at the rate of 30 to 35 revolutions, and consequently save considerably in fuel. I take the seven days running of the "Arno," and I find that the average speed to Liverpool is nearly 9 ½ knots per hour. Then I have another voyage of the same vessel from Liverpool to Gibraltar in March 1851, under an eight days' steaming; the average speed is very nearly 9 ¾ knots per hour, being 9 and $\frac{15}{24}$ths. Then there is the following voyage in April, and the average speed is 9 ¾ knots nearly, being 9 and $\frac{17}{24}$ths. Will the Committee allow me to refer to a letter received from a firm in Liverpool, extensively connected with the Australian trade; I believe they despatch about one vessel a month to Australia; it is addressed to myself, and states, "Having been informed that the company which you represent have tendered to the Government for the performance of a mail service between England and Australia by way of Panama, and being largely connected with that trade, we have much pleasure in expressing our unqualified opinion in favour of that route as the safest, most comfortable, and quickest; in proof of which latter we have to state, that on the 11th July 1849 our ship 'Emigrant' sailed from Sydney, New South Wales, arrived at Callao on the 26th August, and letters from her reached Liverpool on the 3d November, making in all 115 days from Sydney; while letters of the 10th July *viâ* India reached here only on the 5th December, being 148 days, and showing a difference in favour of the South American route of 33 days." It is also to be remarked in reference to this, that this vessel arrived at Callao on the 26th; our departure that month was upon the 9th; so that those letters had to lie in Callao from the 26th to the 9th of the succeeding month, being a very considerable loss of time; they had to go on to Panama, cross the isthmus, and go on to New York; I cannot say how long they were detained there; the letters came in an envelope; he destroyed the envelope, thereby depriving me of the postmarks. He says further: "We have also to state, that our ship 'Sea' sailed from Sydney on the 25th October 1849, arrived at Callao on the 9th December, and letters from her reached Liverpool on the 2d February 1850, making in all 110 days; while letters of the 2d October, dated at Sydney, by way of India, did not reach Liverpool until the 25th February 1850, making 142 days, and showing a difference of 32 days in favour of the South American route."

1734. Are you aware how those letters which left Sydney proceeded

proceeded to India?—I am not aware; I presume they must have gone by a sailing vessel from Sydney to Singapore. Mr. *W. Just.* 6 May 1851.

1735. Unless you can tell us in what way they went it is hardly a satisfactory comparison?—It proves that as the matter stands, the time by the western route is more to be calculated on than by the eastern route.

1736. Admiral *Bowles.*] Can you state what freight you propose per ton?—We do not expect to have much cargo, but the freight would not exceed 15 *l.* a ton throughout, that is, upon the finer description of goods. We look upon the amount of goods as being so very inconsiderable, that we have not thought of arranging anything permanently.

1737. And you would take no third-class passengers?—We should not; I have stated the maximum of our fares, and I do not think, unless we found it an advantage to reduce the rates of fare, we could embrace the lower class of emigrants.

1738. Are your vessels to be of wood or of iron?—Or iron.

1739. All of them?—Unless compelled by the Admiralty to be of wood.

1740. With respect to the number of passengers who have lately gone from New South Wales to California, do not you consider that rather an accidental circumstance, arising from the finding of gold in such large quantities in California, and not likely to be a permanent trade?—I believe the last letters received from Sydney show a continued increase in the trade between Sydney and California.

1741. A continued emigration?—Yes; and shipping of every kind. Those papers I have referred to are among the latest which have come to hand.

1742. What would be the dates of the letters which would be received, according to your arrangements, from Sydney; in how many days would they come?—Sixty-one days and six hours would be the time in which they would come; provided we get our nine knots an hour, it would be less.

1743. Mr. *Divett.*] Are you not aware that the Sydney people, in consequence of passengers arriving from England, and going off to California, wrote to the Commissioners of Emigration here, offering to bring those emigrants, under an engagement to repay their passage-money in the event of their doing so?—I am not aware of that fact.

1744. Mr. *Mangles.*] Did you hear Captain Blackwood examined on Thursday last?—I did not.

1745. Captain Blackwood stated, in answer to questions 1428 and 1429, "My chief objection to the Panama route is,

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is, that it leads to nothing; it is not a route which our commerce and trade require; if there were any object in the Panama route the question would be a very different one, but it leads to nothing." Then he goes on to give an answer to the next question, which was, "Does not it lead from England to Sydney?" He says, "You have a much more important route to the westward; I think the intermediate trade with America is not to be named in the same day with the trade of India;" do you agree with that?—No, I do not; I think that the statistics that I have laid before the Committee go to prove that the trade to the westward is very considerably in excess of that to the east; as much so as a comparison of 38 vessels is to 5. The number of vessels goes to prove that the trade with Central and South America is vastly on the increase, and at present very considerable. Certainly it is far beyond that between India and China and Sydney.

1746. Do you believe that the demand for coal in California, and generally on the west coast of America, from Sydney or from New Zealand, if coal be found there, is likely to increase?—I have no doubt of it. It depends, of course, very much upon the quality of the coal; but I believe the coal is improving, and no doubt it will improve, the more the mines are worked; and should the quality be anything like that of the English coal, freights will be very considerably cheaper between Sydney and the west coast than between England and the west coast. I may here mention that I chartered a vessel which was going out with emigrants to Sydney to take part cargo of coal from Sydney to the west coast; the freight was only 1 *l.* a ton from Sydney to Callao.

1747. You have mentioned in your evidence that many parties connected with Sydney, with whom you have had conversations, are favourable to the Panama route; will you name any of the individuals to whom you refer?—I have seen Mr. Robert Lowe, a member of the Legislative Council in Sydney; also Mr. Smith, of Liverpool, a house very largely connected with the Australian trade; also Mr. Mackellar, who wrote me the letter which I read, who is a man of great experience in those seas; they also seem to believe that the scheme which has now been laid before the Committee, if submitted to the people in Sydney, would be approved of in preference to either of the other proposals. There is also Mr. Armitage, of Huddersfield, who is likewise very largely connected with Sydney. I have seen those parties, and I believe their opinion is decidedly favourable to the Panama route.

1748. There

1748. There was a question asked you with regard to the capital and the accounts of your company; you declined for the reasons which you gave to put in the accounts of the company; have you any objection to put in a list of the proprietors of the company?—None; I have the list here (*The same was delivered in*). Mr. *W. Just.* 6 May 1851. *Vide* Appx.

1749. Are the parties whom you mentioned as connected with the Panama Railway Company, Mr. Robert Stephens, and Mr. Aspinwall, persons of high consideration at New York?—Yes.

1750. And is the company a responsible company?—It is.

1751. And competent to perform what they have undertaken?—So much so that Mr. Aspinwall took a contract for running the mails between Panama and San Francisco. To show what the Americans are doing in the Pacific, I have here an advertisement by the Pacific Mail Steam Ship Company of the United States, by which, "The public are informed that under the new arrangements of this company steamers inspected and approved by the navy department and carrying the United States mails, will continue to leave Panama and San Francisco on the first and fifteenth days of each month, unless detained by unavoidable accident, and will touch at Acapulco, San Diego, and Mounterey. The following steam packets belonging to the Pacific Mail Steam Ship Company are now in the Pacific, one of which will be always in port at each end of the route." They give the names of the ships (*The same was delivered in*). It has been mentioned that this Pacific Mail Steam Ship Company of the United States had first entered into a contract for the conveyance of the mails monthly between Panama and San Francisco. The sum given by the government of the United States was 199,000 dollars per annum. They have now undertaken to perform a semi-monthly service, for the extra sum of 149,000 dollars, thus making 348,000 dollars per annum for a semi-monthly mail service between Panama and San Francisco. The number of the ships in the list I have given in amounts to 20, besides others which are being built. I know that in addition to those there are a considerable number of steamers in the Pacific owned by private parties. *Vide* Appx.

1752. You spoke of the railway having a pier at Chagres, alongside which vessels drawing 20 feet water might lie?—That is at Navy Bay, about six miles south from the Chagres River, and a far more desirable harbour.

1753. Is

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1753. Is that where the mail-packet steamers would go?—They would go there I have no doubt.

1754. Would they be able to lie alongside of that pier?—Perfectly so.

1755. Is there to be any pier at Panama?—I think the railway company are bound to erect a pier there.

1756. What will be the depth of water there?—There is a rise and fall of tide of 22 feet there. Our steamers lie within two or three miles of the beach at present; there is a jetty, but a very trifling one.

1757. Do you expect to be able to lie alongside the pier at Panama?—We have had a proposal made to us for the construction of a pier there; but the expense would be very considerable, and the directors have not made up their minds whether they will erect a jetty at Panama or not, for the purpose of landing and embarking passengers.

1758. Do you think there is any probability of a pier being built?—I think there is every probability of the pier being built by the railway and steam-packet companies together.

1759. Admiral *Bowles.*] How would the depth of water answer there?—They must run out the pier a considerable distance; perhaps 300 or 400 feet.

1760. Mr. *Willcox.*] When was the Pacific Steam Navigation Company established?—It was established in 1840.

1761. With what vessels did you commence?—With two vessels, the "Chili" and the "Peru." They had no contract for the first two or three years, and they were very unsuccessful.

1762. Were they built of wood or iron?—Of wood.

1763. What has become of them?—They are still running on the coast.

1764. Have you had any heavy repairs upon them?—We have had very heavy repairs; I think we have laid out, within the last two years, about 7,000*l.* in the repairs of those two vessels; but they are now in a very efficient state.

1765. How many vessels has the company altogether?—We have four now, and are building four others.

1766. How many of those will be of iron?—There will be six of iron. We have recently sold another iron steamer.

1767. In point of fact, you have never had more than two wooden vessels?—Never more than two wooden vessels.

1768. The rest have been all of iron?—Yes.

1769. I presume you have found those more advantageous?—Yes, very much so; not only in regard to the wear and tear,

tear, but also as to the construction; you are enabled to get a greater length to the beam, which renders the ship more easily propelled, and otherwise they work to a great deal more economy. The stowage capacity of iron ships is considerably beyond that of wooden vessels, and I think the expense of repairs may be five per cent. in favour of the iron ship. Mr. *W. Just.* 6 May 1851.

1770. How long do you suppose an iron ship may last, barring accidents?—It is almost impossible to say. When I had the management of a company in the north, Mr. Napier built the "City of London," a vessel of 1,100 tons; I saw her lately in the dock here, she is now about nine years old; it appears to me that the vessel is just about as perfect as when she was launched from the ways.

1771. If the Government were to stipulate in their conditions of tender that the vessels must be built of wood, you would be so far thrown out of the field of competition?—If the Admiralty had stipulated in their new contract for wooden ships, in preference to iron, we certainly could not have undertaken it at the low rate which we have accepted at present. At least it appears to me that it would have required great consideration.

1772. In the rates of passage money which you propose to charge, in conjunction with the Royal Mail Company, do you include provisions, wine, beer, &c.?—We do not include wine; we include provisions, but not wine.

1773. Not any drink of any kind?—No.

1774. Do you include the journey across the isthmus in the passage money?—We do.

1775. And the living on shore?—Yes.

1776. Mr. *Divett.*] Are you aware whether the West India Mail Steam-Packet Company carry any passengers of a class lower than what you call second class?—I think their lowest rate of fare is 20 *l.*, but I cannot speak decidedly to the amount of their fares. Captain Chappell will be better able to state than I am.

1777. That you think is the lowest rate of fare between Southampton and Chagres?—I think that is the amount.

1778. In the chart sent to the Committee, from the Admiralty, the direct distance is given from Panama to Sydney at 7,839 miles. I observe that you give your distance, touching at the Bay of Islands, at 7,930 miles; have you gone sufficiently accurately through those calculations to feel confident that that distance is correct?—I may mention to the Committee that I have had four or five nautical men

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men taking those distances, and, strange though it may appear, none of them agree exactly as to the distance. I have therefore taken the longest distance of the whole, and I find that it is within six miles of that now stated by the hydrographer of the Admiralty.

1779. The longest distance you have taken in the statement given with respect to the distance between Panama and Sydney, touching at the Bay of Islands, is 7,930 miles? —Yes.

1780. We will now take the distance back from Sydney, going through Cook's Straits, and going as straight as the weather would permit, what is the distance you calculate on in that way?—There is very little difference between the voyage out and home; we shorten our longitude by going in a more southerly direction: the distance out from Panama to Otaheite is 4,500 miles.

1781. What is the distance home?—The distance from Sydney to Port Nicholson appears to be 1,170 miles; from Port Nicholson to Easter Island is 3,766 miles; from Easter Island to Panama the distance is 2,900 miles.

1782. Lord *Naas.*] Should you approach South America in the neighbourhood of Callao?—No, nearer to Payta; there we have also a coal depôt.

1783. Have you had any experience yourself in the navigation of those seas?—None; I have never been there.

1784. Mr. *Scott.*] I understood you to say, that by some document it had been represented that the time required for making this Panama route would be 90 days?—The party from whom I had the information saw a colonist with the document in his hand, to the effect that a report of that nature had emanated from the Committee for the Promotion of Steam Communication to Australia; that they had written to Lord Grey a letter, and in that letter it was stated that the time required for the Panama route would be about 90 days; that Lord Grey had sent out this document to the colony; and I infer from that, that they may have entertained a prejudice against the Panama route in consequence of that representation; I believe that is the fact, and that on searching the records it will be found to be the case.

1785. Lord *Naas.*] Is the Pacific Steam Company entirely an English company, or an English and American company? —I think we have about a dozen proprietors in South America.

1786. The greater portion of the capital subscribed is English capital?—It is.

1787. It

1787. It is an entirely different company which proposes to make that railway, is it not?—Yes; we have no connexion with it.

1788. Is that an American company?—Entirely an American company; parties in this country may hold shares, and have an interest in it. I know that shares were offered to me, but I did not accept them.

1789. There is no connexion between the Pacific Steam Packet Company and the Panama Railway Company?—Not the least connexion; but they are upon the most friendly footing.

1790. You said that in your opinion the colonists were generally favourable to the Panama route?—I did.

1791. Your only ground for so stating was conversations which you have had with colonists in this country?—It was.

1792. Are not you aware that so lately as the latter part of last year, the Legislative Council in Sydney voted 6,000*l.* for the Indian line, and refused to vote any sum of money for any other line?—I am not aware of the fact.

1793. Do not you think that that would be a pretty good expression of the feelings of the colony on the subject?—Provided they knew the merits of the Panama line, which I infer they did not.

1794. You say that the steamer would stop one day and eight hours at Melbourne; would that be a sufficient time to allow persons resident in the interior of that colony to answer their letters?—I do not think it would; but it appears to me that it would enable them to reply to letters which are urgent. But I have also explained that instead of one day and six hours, our arrangements would admit of two days now; and in the event of our reaching the speed of nine knots an hour, we should increase the stoppage to four or five days, and the same at Hobart Town.

1795. Your plan would be to give the inhabitants of Melbourne and its neighbourhood two days to answer their letters, and to give no communication whatever to the western settlements?—It would. I have explained that the Hunter's River Company have steamers now running, or intend to run steamers from Port Phillip to Adelaide. I do not know whether they mean to extend them as far as Swan River, but they intend to run a vessel monthly, or more frequently, between Port Phillip and Adelaide. Those would connect the whole.

1796. Would the additional time gained by the speed of nine knots admit of communication with Adelaide?—I think it

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it would not; that is to say, the mails would be delayed one month; the letters would come home by the following steamer. The time to Adelaide would be about 69 days instead of 60.

1797. Mr. *Plowden.*] I understood you to say that to go from England to Chagres would occupy 19 days, at a speed of 8½ knots an hour?—No; the rate of speed of that Company, I believe, is about 11 miles an hour. I have not the least doubt but they will get that speed out of their vessels; the Company have now announced the fact that their new steam ships will accomplish the line to Chagres in 19 days.

1798. At 11 knots an hour?—I think it would require a speed of from 10½ to 11 knots an hour.

1799. I understood you to say that vessels employed by your Company were prepared to perform the whole voyage without taking in supplies of coal?—Between Panama and the Bay of Islands, those ships would carry coal sufficient; the quantity of coal necessary for the whole run would be about 770 tons.

1800. How can you reconcile that with the opinion given by Captain Hamond, who speaks of there being a relay for coaling?—I do not profess to agree entirely with Captain Hamond. Allowing those vessels to consume from 9 lbs. to 10 lbs. of coal an hour per horse power, only 770 tons of coal would be required. And I have read Mr. Napier's letter, stating that those vessels would carry 800 tons of coal in addition to 150 tons of cargo. We should have a reserve at Tahiti, in the event of its being required. We have also Payta on our way home. In the event of our requiring to coal there, it would occupy, perhaps, 12 hours to go there.

1801. You quoted some statistics from Mr. Montgomery Martin, to the effect that the trade between Sydney and New Zealand in 1848 was four times as great as between New Zealand and India and China; do you place much confidence in that statement, and believe that it is to be depended on?—I presume it is to be depended on; I have no reason to doubt it.

1802. You state that the Pacific Steam Navigation Company do not contemplate deriving advantage from the freight of cargo, but principally from passengers?—Principally from first class and intermediate passengers; we have two rates of fare; and I expect also there will be perhaps a considerable quantity of goods between the west coast and Sydney.

1803. Has your company made any arrangement with the Panama Railway Company about fares?—We have not.

1804. Do

1804. Do you apprehend any difficulty in making such an arrangement?—Not the least; they will be as delighted to see us as we shall be to get their accommodation.

1805. Are you satisfied that when the colonists voted 6,000*l.* for the encouragement of the Singapore route exclusively, they had not the merits of the Panama route perfectly before them, or before them at all?—I am convinced that they had not the merits perfectly before them.

1806. Mr. *Stanley.*] In the event of any goods being sent out from England by the Panama route, would not the delay arising from transhipment, both at Chagres or Navy Bay, whichever was the harbour selected on the one side and Panama on the other, be very great?—At present we get goods across the isthmus with all the delay arising from their being carried on mules backs, in about three days. I think only the finer description of goods would go.

1807. You are aware that at present no goods whatever, except gold dust, bullion, and some personal property belonging to Californian emigrants, and other passengers, find their way across the isthmus?—I have stated that at present a very considerable quantity of goods goes. I read an extract from the manager's letter, to the effect that a considerable quantity of goods crosses the isthmus to California, paying a large transit charge, and also 100 dollars a ton for freight between Panama and San Francisco.

1808. Are you aware that at Panama boats have nearly an hour's pull from the shore, even in calm weather, to reach the place where the steamers habitually lie?—I am not aware of that fact. I believe they may take between half an hour and an hour at present. But I have been explaining to the Committee that there is little or no doubt whatever that sooner or later, and I think at no distant period, we shall have a jetty at Panama which will give great facility, and obviate any difficulty which may exist at present in landing or re-embarking.

1809. Has the Pacific Steam Navigation Company lost any ships since the first establishment of the company?—Never.

1810. With regard to the voyage from England to Chagres, do you know what is the shortest passage which has actually been made as yet?—I do not. I think it has been made in 23 days, but I am not quite sure.

1811. Mr. *Cowper.*] In the scheme which you have proposed for a line of communication from New Zealand homewards, you allow 39 days and 16 hours from Port Jackson to Panama;

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with vessels of the size and power you have mentioned, would not many occasions arise when they would not do it within the period you have named?—I do not think there is the least chance of any such occurrence taking place. It appears to me that the trade winds and the currents are so favourable, as indicated upon this chart, extracted from the Physical Atlas by Mr. Saunders, that we might calculate with certainty upon getting our distance done within the time stated in these tables.

1812. Did not you state that 8 ½ knots was the average rate at which those vessels would go; if that be the average, there would be some occasions when they would not perform the whole of the voyage at that rate of speed?—They may fall under 8 ½ knots, but the trade wind alone will give them from 9 to 10 knots an hour, I believe, without steaming at all, in the more favourable parts of the passage.

1813. By the method in which you have arrived at the average speed which would carry those vessels from Port Jackson to Panama in 39 days and 16 hours, it is clear that there must have been some occasions on which they could not have arrived within that time?—They may possibly exceed it; we have not had any experience, of course.

1814. Upon those occasions, when your vessels arrive at Panama after the time fixed, how long will the passengers have to wait at the Isthmus of Panama before they can proceed on to England?—The passengers I think come across now in about 36 hours.

1815. Will not they have to wait a fortnight till the next packet?—No; they will come direct over the isthmus, and embark by the packets of the Royal Mail Company.

1816. Upon occasions when your vessels arrive after the departure of the Royal Mail Steam Packet Company's vessel, will not the passengers have to wait till the next packet, a fortnight afterwards?—They will; but I do not contemplate such an occurrence as that; my impression is, that we have plenty of time in hand to make the passage. We have never had any such delay arise between the west coast mail and the steamers from Chagres to England; we have never had a passenger delayed that I am aware of.

1817. Do you anticipate attaining the same punctuality with screw steamers of 200-horse power across the Pacific that you have already attained with paddle-wheel steamers along the coast of South America?—I do not expect that we shall have the same regularity, but it appears to me that we have a day or two to spare, and that we shall very seldom fall

fall under the performance I have mentioned of 8½ knots on the average; but even if we should do so, I have no doubt we should be able to reach the port in time, so as not to create the difficulty which you contemplate. Mr. *W. Just.* 6 May 1851.

1818. The point to which I wish to draw your attention is, that while in a trunk line it is very well to fix the arrivals and departures at a certain average, yet in a line which is a branch you must allow a considerable margin for casualties, because if the average is not kept up in every instance a fortnight's delay must occur to passengers on the Isthmus of Panama; therefore ought you not to allow more than 39 days and 16 hours for the homeward passage?—We have now taken a speed of 8½ knots as the average, but I have quoted the authority of Captain FitzRoy, Captain Hamond, and Captain Chappell, and also that of Mr. Napier, as being of opinion that an average speed of 9 knots will be attained. Should that be the case, we would have two or three days between us and any such contingency as that which is supposed. If we had taken the outside rate of 9 knots instead of 8½, I think there might have been some doubt about it; but it appears to me that, as we have taken the minimum rate, there is little chance of any such contingency arising; but I think the same reasoning would apply, and with still greater force, to the Singapore and Sydney route. I understand the navigation is more difficult, and I think there would be more likelihood of such contingencies arising were that route adopted.

1819. Is not it generally believed that auxiliary screw steamers, though they may attain as great a speed as full power paddle-wheel steamers, under certain circumstances, cannot, in a long course of voyages, secure the same regularity, and that therefore you ought to leave a larger margin than you have done for this particular line?—I have stated the log of the steam ship "Arno;" that vessel has one-horse power to five tons measurement. I have given three voyages in succession in the Mediterranean, and she makes an average speed of 9½ to 9¾ knots per hour; I have not the least doubt that in the Pacific her average speed would not fall under 9, but I have taken 8½ by the tables, and allowing for the difference between the one and the other, there is ample provision made for any such contingency as now suggested; and I have no doubt we should be able to do it in the time we have stipulated. Of course, absolute certainty, either by paddle-wheel or screw vessels, you cannot calculate on; accidents will arise to prevent regularity in any trade, but

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I do not think we have any reason to calculate upon irregularity with our line more than upon any other line.

1820. Can you give us any longer experience of the "Arno's" voyages than three?—Those are the last; she only made four voyages; in one case one steamer broke down, and the other returned, but she proceeded.

1821. Do you think it would be safe to draw any inference as to the regularity of the "Arno's" sailing from three voyages only?—Being consecutive voyages, it appears to me that the number is sufficiently ample.

1822. The data from which you have gathered the number of passengers, and the quantities of goods which you are likely to carry in these vessels should they be established, have been advertisements in newspapers and some passages in Mr. Montgomery Martin's works; have you any other data than those?—I have collected the data from different sources, newspapers principally, and also from some of the colonists in this country, and I feel perfectly assured that the revenue we contemplate will be fully made up. It appears to me that there is every chance of a considerable increase. So far as the profits of the first year are concerned, provided our tender be accepted, I do not think they will be sufficiently remunerative, but I think, during a contract of seven years, the Company would be able to make a fair profit.

1823. *Chairman.*] You look to the increase of the profit?—Yes, decidedly.

1824. Mr. *Stanley.*] Have you never known instances in which the difficulty of finding a conveyance across the isthmus, together with some delay in the arrival of the steamers, have caused passengers to miss the outgoing steamer on the other side, and to incur a month's detention?—I do not remember any such occurrence. I know that there was, about the time of the California mania in consequence of the number of passengers crossing there, a difficulty in getting mules, but I believe that difficulty is now overcome by a considerable accession to the number.

1825. Do you mean to say, that in the winter of 1849, which was about the time that the great amount of emigration was going on, there were not many passengers detained for a month at the isthmus, from the impossibility of finding the means of going across?—I do not think any of our passengers were detained; I cannot speak as to the California passengers; I have no remembrance of it.

1826. Mr. *Berkeley.*] I understood you to say that the Pacific Steam Navigation Company gave up all idea of assisting

assisting emigration to Australia?—We should carry the better class of emigrants.

1827. You would not at all assist the poorer class?—No. I think even were it possible to embrace the poorer classes to whom time is no object, it would not be desirable to interfere with exising interests, the shipping now engaged in the Australian trade.

1828. You said that the Royal Mail steamers would realize a speed of 11 knots an hour?—I have not made the calculation, but it occurs to me that if they are to do the passage they profess to be able to do in 19 days, the average speed must be between 10½ and 11 knots an hour; I take it entirely from their own statement.

1829. Have you calculated how many days at the same rate the passage would take by Suez?—No, I have not. I would rather not speak to other routes; I am not a nautical man.

1830. *Chairman.*] Have you anything further to state to the Committee bearing upon the subject of their inquiry?—I am not aware of anything.

1831. Mr. *Mangles.*] I presume that all those contingencies and casualties of passengers missing the steamer, and the alleged inferiority of screw vessels, are quite as applicable to the one route as to the other?—Decidedly; and I think a great deal more applicable to the Singapore and Sydney line than to that *viâ* Panama.

1832. And as respects the screw, the objections are equally applicable to the Cape line?—Yes. I think, as regards the Cape line, they would have great difficulty in making the homeward passage.

1833. Mr. *Cowper.*] If a screw steamer in going round the Cape should happen to be too late, what inconvenience would occur to the passengers; would they be detained anywhere for a fortnight?—It would increase the time occupied in the voyage.

1834. Not by more than the delay of the vessel itself?—Of course not. But is it fair to contemplate any such contingency in our case, seeing that we have for four or five years been running in connexion with the Royal Mail Company, and never had any such contingency occur? Besides the facilities of crossing the isthmus are about to be increased, making it a six hours' passage, instead of a 36.

1835. Do not you think some contingency of that sort may be anticipated when you allow only 39 days and 16 hours for a vessel of 1,000 tons and 200-horse power to cross the Pacific?—I really do not.

Captain *Edward Chappell*, R. N., called in; and Examined.

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1836. YOU hold a commission in Her Majesty's service?—I do.

1837. What office do you hold in the Royal Mail Steam Packet Company?—I am the secretary and joint manager of the Royal Mail Steam Packet Company.

1838. Have you heard the evidence which has been given to the Committee by Mr. Just, as to the arrangements which have been entered into between the Royal Mail Steam Packet Company and the Pacific Steam Navigation Company?—Yes.

1839. Do you consider that he has stated those arrangements correctly?—He has stated them quite correctly.

1840. Have you yourself crossed the Isthmus of Panama?—Never.

1841. Have you navigated those seas?—I have been five years in the West Indies, but never at Chagres, or on that part of the coast.

1842. Not at Panama?—No; I have been, of course, for the last 10 years in the fortnightly reception of all kinds of correspondence from that part of the world, and I fancy that I know it as if I had been there for years.

1843. Have the Royal Mail Steam Packet Company offered to the Government to establish steam navigation with the Australian colonies?—In 1846 they did. On the 6th of June 1846, the Royal Mail Steam Company proposed to the Treasury to undertake the conveyance of the mails between Panama and New South Wales. On the 19th of June following a letter was received from the Treasury, merely acknowledging the receipt of the company's offer.

1844. In what kind of steam boat did they propose to effect that communication; in screw vessels or paddle-wheel vessels?—In screw vessels.

1845. Similar to those which are now proposed by the Pacific Steam Navigation Company?—Not precisely the same in tonnage or in power, but similar vessels.

1846. Has your attention been turned to the best mode of establishing postal steam communication with the Australian colonies?—It was necessarily turned to it at that period. I have taken the best means of informing myself on the different routes which have been before this Committee, from imagining that it was a matter of considerable interest to my own company, as well as from the interest I take in steam communication

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communication generally. I thought perhaps I might simplify the matter for the Committee by taking each particular route and working it out, as it did not appear to me that the Committee had such a statement before them at all at present. I have worked out by every route the number of miles, the speed, and the number of days, with a summary of the whole, which, if your Lordship will allow me, I will hand in to the Committee.

1847. Will you state the summary with respect to each route?—By Panama, the distance to Sydney I make 12,572 miles, to be performed in 64 days.

1848. Is that by New Zealand?—By Tahiti and New Zealand to Sydney; I should observe to the Committee at this stage, that as I found my distances, which I worked out at first for myself, and then had tested by the mathematical examiner of the company I belong to, were different (being sometimes more and sometimes less) from the calculations made by the Hydrographer of the Admiralty, I threw overboard all my own distances, and I adopted all the Admiralty distances; therefore these are calculated on the Admiralty distances. Taking first the Panama route, the distance from Southampton to St. Thomas, I take as 3,587 miles, which at the speed of 11 knots with the new vessels now being built, will be accomplished in 14 days; to Chagres, is 1,035 miles, which at the same speed of 11 knots, will be accomplished in four days; then for crossing the Isthmus of Panama, which I take at 90 miles, I have put down two days, although it is frequently done in 36 hours at present; from Panama to Tahiti is 4,500 miles, which taken at 8½ knots, which the Pacific Company calculate to be their average, would be done in 22 days; from Tahiti to New Zealand is 2,205 miles, which at the same speed, would take 11 days; from New Zealand to Sydney is 1,155 miles, which at the same speed would take six days; then I allow for stoppages over the whole line five days; I make, therefore, a total on that route of 12,572 miles, in 64 days. Then I take the next route by Singapore and Torres Straits; from Southampton to Gibraltar 1,172 miles, at 10 knots, which is the speed given by the Peninsular and Oriental as their speed generally, that would be done in five days; then from Gibraltar to Malta, 988 miles, in four days; to Alexandria 815 miles, in four days; then for crossing the Isthmus of Suez, 207 miles, I allow three days; I do not believe it is done much under that; then from Suez to Aden, 1,310 miles, in six days; from Aden to Point de Galle, 2,121 miles, in nine days;

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from Point de Galle to Singapore, 1,497 miles, in six days. Now the speed alters, and I take the speed at eight knots, which I have taken on all the branch routes alike; if more powerful steamers are put on to do it, that would operate equally upon any line, I imagine. From Singapore to Batavia, 520 miles, at eight knots, three days; from Batavia to Timor, 1,240 miles, at the same speed, in six days; from Timor to Cape York, 935 miles, in five days; from Cape York to Sydney, 1,905 miles, in 10 days; then I allow stoppages over the whole of that route, the same as on the other, five days; making a total on that route of 12,710 miles, in 66 days.

1849. Mr. *Cowper*.] Do not you allow 8½ knots for the Pacific Steam Company?—Yes.

1850. And yet you only allow eight knots on this?—I allow eight knots on all the others where the branch commences. In my own opinion, in the case of the Pacific Company, you may rely on nine knots being performed, where in other parts of the navigation they cannot rely even upon eight knots; I have only given half a knot when I think I ought to have given a whole knot. The next route I take is by Ceylon; proceeding to Ceylon, as by the preceding route, is 6,613 miles, at 10 knots, in 28 days; then branching off from Point de Galle, going by Cape Leeuwin, 3,192 miles, at eight knots, would take 17 days; from Cape Leeuwin to Sydney, 1,985 miles, at the same speed, in 10 days; for stoppages on that route throughout the line, I allow five days as before; making a total of 11,727 miles in 60 days, being the nearest of all the routes. Then the next route I have taken is, from Southampton to Point de Galle, as by the preceding routes, 6,613 miles, at 10 knots, 28 days as before; and supposing the ship to leave Point de Galle and proceed straight to Swan River, calling there, it would give 3,060 miles, which at eight knots, would be 16 days; to Adelaide, 1,345 miles, at the same speed, seven days; to Port Phillip, 505 miles, at the same speed, three days; to Sydney, 602 miles, at the same speed, three days; then the stoppages over the whole route, I take at five days, making a total of 12,123 miles, in 62 days. The next route I have taken is by the Cape of Good Hope; from Plymouth to the Island of St. Vincent, 2,260 miles, at eight knots, 12 days; to Sierra Leone, 906 miles, at eight knots, four days; to the Cape of Good Hope, 3,582 miles, at the same speed, 19 days; to Wilson's Promontory in Australia, 5,971 miles, at eight knots, 31 days; and to Sydney, 443 miles, at the same

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same speed, two days; and upon that route I have allowed two days less stoppages; imagining that they might not want five days, I have allowed only three; making the total of 13,162 miles, in 71 days. Then I have taken another route by the Cape of Good Hope, going straight to Swan River; from Plymouth to the Cape of Good Hope as by the preceding route, 6,748 miles, at eight knots, in 38 days; to Swan River, 4,672 miles, at eight knots, 24 days; to Adelaide, 1,345 miles, at the same speed, seven days; to Port Phillip, 505 miles, at the same speed, three days; to Sydney, 602 miles, also three days, and stoppages over the whole of that route five days as before; making a total of 13,872 miles, in 80 days. I have taken another route which I heard mentioned in this room, by Plymouth to Sydney direct, without calling anywhere. The distance as given by the Admiralty Hydrographer, availing themselves of the most favourable winds, would be 13,280 miles, which at a speed of eight knots, would be performed in 69 days; so that the summary would be, the Panama route, 12,572 miles, in 64 days; the Singapore route, 12,710 miles, in 66 days; Ceylon and Cape Leeuwin, 11,727 miles, in 60 days; Ceylon and Swan River, 12,123 miles, in 62 days; the Cape of Good Hope, 13,162 miles, in 71 days; the Cape of Good Hope and Swan River, 13,872 miles, in 80 days; Plymouth to Sydney direct, 13,280 miles, in 69 days. I will put in the paper which contains the statement of those various distances, in a tabular form. (*The same was delivered in.*)

1851. Mr. *Divett.*] You allow a speed of 10 knots from Aden to Point de Galle, do not you?—I do.

1852. Is there any reason why you should not allow 10 knots from Point de Galle to Swan River?—Only this reason: you there take on a branch steamer. I said before, that if you put a full paddle-wheel steamer on one route you may put it on the others, and then you equalize the time. If you take 10 knots from Point de Galle to Swan River, and you take the same amount of speed from Panama to New Zealand, it comes to the same thing.

1853. You apply that likewise to the distance between Singapore and Sydney, in passing through Torres Straits, where nobody contemplates using the screw?—If you ask me about the merits of the respective routes, I should think no one contemplates going through Torres Straits at all.

1854. Mr. *Cowper.*] Is there anything in the sea between Singapore and Sydney, by the western coast of Australia, which would prevent your going 10 knots an hour, if the vessels

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vessels were properly built for the purpose?—I should imagine not; but I cannot conceive of sending the mails to Singapore to come back again. Point de Galle is much nearer than to let them go to Singapore.

1855. *Chairman.*] What point in Australia do you consider the best for communication with the mother country?—I should say decidedly Sydney, at present. First, as it is the seat of Government; secondly, as it is more central, and is connected with the colonies to the north and south of it.

1856. Do the Royal Mail Steam Packet Company's steamers land their passengers at Chagres?—They have landed them always at Chagres hitherto.

1857. Are there any difficulties there now owing to the state of the harbour?—We have never been prevented landing our passengers from the beginning.

1858. At what distance do you land your passengers from the shore?—The bar of the Chagres river will not admit of large steamers going into the river; they therefore anchor in the open roadstead outside. In the first instance they landed their passengers by the boats of the ship herself. Then the company built two boats on purpose, and sent them there, and since that a small steamer has been employed there by the Americans, and they have sent her off occasionally and landed passengers in that way; but from the beginning to the end there has never been the slightest difficulty in landing passengers, or anything else, at Chagres, or getting anything off.

1859. Lord *Naas.*] What is the distance from the shore to the point where the steamer lies?—I should think perhaps a mile and a half.

1860. *Chairman.*] Are you acquainted with the progress of the railway now being constructed across the Isthmus of Panama?—Expecting to be asked that question I came prepared with the latest account received by the company of it. I should say that our company has taken a very lively interest in the railway across Panama; in the first place, from the considerable advances it has made in connexion with it. The company has advanced, as the Committee is aware, a loan to the republic of New Granada to the extent of 4,000 *l.* They are under a treaty which was negotiated under the sanction of Lord Palmerston, to advance 4,000 *l.* for the repair of the roads as they now stand, between Cruces and Panama. They are also in negotiation with the Panama Railway Company at New York, to make a loan to them, under certain conditions and securities. It is that which has led us to take a deep interest

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interest in all which takes place on that railway. I will read a short extract from a letter from Mr. Perry, the British Consul at Panama, and the agent of the Royal Mail Company; he says, "I last addressed you on the 3d instant, in reply to your various communications received up to that date. I now have to inform the Court of Directors, through your medium, that the works of the railroad are really in progress. Mr. Matheson, the directing superintendent of the Pacific Steam Navigation Company, has been lately at Navy Bay; he there saw eight vessels discharging munitions, and the ground between Gatun and Navy Bay is opened sufficiently for the driving of piles, which is now being done. There are 800 men at work on the road, which in a few days I am assured will be augmented to 1,400. They have three pile-driving machines in operation, and I have learned from Mr. Matheson, and other respectable persons, that matters at Navy Bay, Gatun, Bujio, Soldado, and Gorgona, bear the appearance of active business. The contractor talks of opening the road to Gorgona at the end of the present year." Some questions were put to the engineer who is constructing the railway, preliminary to our granting a loan to assist the making of the railway, and these are answers to our questions: "Engineer's Office, Panama Railroad, Manzanilla Island, February 6th, 1851. To the Board of Directors of the Royal Mail Steam Packet Company. Gentlemen, Mr. J. L. Stephens, president of this company, having transmitted to me a list of queries proposed by your Board to Mr. Stephenson, dated London, September 10th, 1850, with a request that I would answer them, and address myself to your company, I have the honour to submit the following: Query 1st, The plan of road adopted, and now under construction, is a combination of piles and light grading. Piles are used only as a means of expediting the work, and on such parts of the line as would subject the labourers to undue exposure from the climate, such as the low grounds between this place and the Chagres River, the crossing of ravines, watercourses, &c. The rapidity with which this kind of road can be executed may be stated at one mile per month for each pile-engine, of which five are now on the ground. Query 2d. The line of road from this place to Gorgona is so located as to require no expensive grading, neither deep cuttings nor high embankments, and will fall within the estimated cost of 30,000 dollars per mile. Query 3d. A force of about 800 labourers is now employed on the work between this place and Palenquilla, to which an accession of 400 is daily expected,

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pected, and an additional 300 in the ensuing month, for the upper division of the line. I have very little doubt that the road will be open for travel to Gorgona by July 1st proximo. Query 4th. The piled portions of the road will probably resist the attack of the wood ant and the influence of the climate about two years, which will give sufficient time for filling in with earth and masonry. Queries 5th and 6th. I see no reason, on this part of the railroad, for adopting gradients which will require the introduction of the kind of locomotive engine invented by Mr. Sellars; wherefore it is unnecessary at present to express an opinion of the merits of these machines." That is the next account, and is dated on the 6th of February. On the 7th of March we received a letter from a company already established, for the purpose of taking every kind of trouble off the passengers, and carrying them clean across the isthmus at certain rates. The writer says, " We have much pleasure in addressing you to-day, to inform you that our arrangements are now complete for the transport of merchandize, passengers, and baggage, by our line of mules, on the road between Panama and Gorgona or Cruces." He also says, " We should be happy to make an arrangement with your company to have a certain number of mules, both saddle and baggage, awaiting the arrival of the passengers by each steamer, so that with a similar understanding with your agent in Chagres, Mr. T. R. Cowan, to provide them with immediate despatch up the River Chagres, your company could engage to carry passengers and baggage right through. Our arrangements for the carriage of specie are superior to what has been the custom hitherto; we have gone to considerable expense to establish a half-way depôt on the Cruces road, where, when necessary that loads should be out more than the day, they will always remain for the night under the immediate inspection of a confidential agent of the company, besides which the conductors are persons inspiring every confidence, and well armed; the half-way establishment on the Cruces road will much conduce also to the comfort of passengers, as they can always depend upon fresh mules, and be certain of not being exposed to night travelling, or sleeping out. All these accommodations have cost a large sum of money, and we rely upon the support of your company and the public in general to remunerate us." The next letter we have is from our agent at Chagres, Mr. Cowan. He says, " It is said the railroad will be finished as far as Gatun by July next, and that then all steamers will discharge at Navy Bay. I know not what the intentions of the company

company may be, but should an establishment be determined upon at that place, it would be prudent in time to authorize some person here to select a suitable water lot before they are all taken up, as the work is progressing rapidly." Upon that we have written to New York, and opened a negotiation for a station for the company in Navy Bay, at the terminus of the railway.

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1861. You have stated in your evidence that at present passengers landing from your steamers have to go two miles from the place of anchorage to the shore?—About a mile and a half, I said.

1862. Do not you think there must be considerable inconvenience in that?—We have never experienced any. We have been doing it for years, and have had no difficulty.

1863. Is not there a proposition by the railway company to carry out a pier there?—Yes, and it is partly finished.

1864. How far will that obviate the difficulty?—It is proposed that the large steamers of the company shall go directly alongside the pier; there will be 20 feet water there.

1865. How far is that pier to be carried out?—The mile and a half applies to Chagres, but the railway company are in Navy Bay.

1866. The intention is not to run to Chagres, but to Navy Bay?—Yes.

1867. At Navy Bay a pier is proposed to be carried out?—Not exactly so; there is an island called Manzanilla Island, which affords a shelter for vessels to anchor; there the water is so deep, that by constructing a wharf large ships can go alongside.

1868. Then in fact the vessels will not go to Chagres, but will go to Manzanilla Island?—That will be so the moment the arrangements are complete. The railway comes completely down to the shores of the bay.

1869. Are you aware that there are sometimes very severe gales on that part of the coast?—No doubt there are very strong breezes; but as to severe gales, I think I have answered that already by saying, that during the number of years we have been going there, and riding in the open roadstead off the bar of Chagres River, we have never experienced any difficulty in landing anything or anybody; and there would be still less difficulty, of course, in Navy Bay, because it is much more sheltered.

1870. On the other side of the isthmus, in Panama Bay, are there any difficulties?—The only difficulty which can be looked

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looked to in Panama Bay, I imagine, is the shallowness of the water in the bay, shoaling off from the shore; that, however, it is proposed to overcome by the means which perhaps the Committee will allow me to explain to them. I hold in my hand a view of the whole region of Panama Bay, with all its islands, in which is laid down a wooden jetty running off upon the rocks, called the Hermanos. This runs out about a mile, and then there is a sufficient depth of water for the largest steamboats; the pier would therefore be about as formidable a work as the pier at Herne Bay; for that is about the same length. This was projected by Mr. M'Geachy, the engineer whom the company sent out to look at it. He reported its perfect practicability; and the Americans, with their rapid way of doing everything, say they will finish it in four months.

1871. Where do you consider that steamers on their passage from Panama Bay to Sydney should coal?—I have considered various places; I need not say that I may not agree quite with the Pacific Steam Navigation Company as to the best port to touch at; I have looked at other places besides Tahiti, particularly at the Gambier group of islands; they afford an excellent port. I consulted Captain Beechey, who is at the head of the Marine Board at the Board of Trade, whose voyages in those seas are generally known to everybody, and who is a capital surveyor and an accurate observer, and he thinks Gambier is the best port, Tahiti being under the French flag. I consulted another friend of mine, Sir Edward Belcher, and he recommends Huaheine as the best. But whichever place be fixed on for the depôt, it matters very little to the question at issue before the Committee, because the distances will be about the same.

1872. Have you had any experience of screw vessels?—I may say that I was the first party who was employed by the Government to report upon the capabilities of screw vessels, and I hold in my hand the report which I made to the Government and the public at the time, as far back as 1840. I have lately read it over, not having seen it for 10 years, and I may say that in the report I made then I do not find one word I could wish to alter; but the greater experience of the screw has shown what it is capable of. It has always appeared to me that the public are under some delusion about the screw; a screw will give as much speed as a paddle-wheel, in proportion to the power in the engine-room, and no more. Under certain circumstances, it might give a little more, and under certain circumstances the paddle-wheel might

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might give a little more, but the full speed of the vessel will always be in proportion to the strength exerted in the engine-room as compared with the size of the vessel in which it is placed. I am so satisfied of that, that it has rather puzzled me to hear the public imputing to the screw a sort of cabalistic power, as if it had something in itself. The screw or the wheel is but an instrument acted on by the power in the engine-room; and I imagine it is therefore to the power that you must look for speed, and it is to speed that you must look for punctuality in all packet communications.

1873. The tender put forward by the Pacific Steam Company is, to perform the distance in screw steamers with auxiliary power; do you consider that such auxiliary power so used on that sea is sufficient to afford a guarantee that the vessels will be able to keep the times appointed, so as to meet your steamers on the royal mail line?—I think the speed they have undertaken to guarantee is not so much as I should have given them; I would have given them nine knots upon their route, because I am informed, though I have not navigated the South Seas, that you may avail yourself of a soldier's wind both ways. In going out you may avail yourself of a soldier's wind out, and by going further to the southward you may avail yourself of a soldier's wind in coming back; therefore nine knots I do not think too high an estimate for them; but the company have taken it at 8 ½ to make sure of it. If they attained a speed of nine knots, that would give them four days additional time for stoppages.

1874. Do not you consider that the cost of coals for steam vessels navigating those seas would be a very great consideration in their expense?—It is the principal item in the consideration of every steam vessel's expense.

1875. The cost of coals in those seas being greater than in any other would increase the expenses materially?—I am not prepared to admit that the cost would be greater; I should question whether the cost of coals at Aden is not higher still; I think it is quite as great at all events.

1876. Mr. *Divett.*] What charges do you make for first-class passengers between Southampton and Chagres?—We have three rates; as I have not brought a table with me I do not know that I can quote them. The rate to be taken by the Pacific Company for Australian passengers is fixed between the two companies.

1877. What are your existing rates from Southampton to Chagres?—We have three, if not four rates; I have not a table with me.

1878. *Chairman.*]

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1878. *Chairman.*] Mr. Just has informed us that you have entered into an agreement with the Pacific Company relative to the charge for passengers?—Yes.

1879. You speak on behalf of the Royal Mail Steam Packet Company only?—Yes. Passengers from England to Sydney are to pay, first class, 105*l.*; second class, 50*l.* Out of the first-class fares the Royal Mail Company is to receive 39*l.*, and out of the second class it is to receive 19*l.*

1880. Mr. *Divett.*] You have not gone into any calculation as to the possibility of taking passengers at a lower rate?—No; but I see no reason why they should not be taken at a lower rate, because the Royal Mail Steam Packet Company take passengers as emigrants, such as mechanics and artisans, to Chagres, on their way to California.

1881. Do you recollect what they charge for passengers of that description to Chagres?—I cannot state at this moment; I will supply that information to the Committee.

1882. *Chairman.*] What is the amount of the passage money between Southampton and Chagres for a first-class passenger?—I cannot say exactly. The Peninsula and Oriental Company have but one rate; the Royal Mail Steam Packet Company have five; I may say that it is about 40*l.* according to the calculation which has been made; the amount which we are to receive out of the charge for conveying passengers to Australia is about the same as we receive now.

1883. Mr. *Divett.*] What do you pay for coals now at Chagres?—We never take in any at Chagres.

1884. What is the price of coals at St. Thomas?—It varies according to the rate of freight; the cost does not vary, but the freight does; I think I am correct in taking it at about 33*s.* a ton.

1885. Is that Welsh coal?—The best Welsh coal; Risca coal.

1886. Mr. *Mangles.*] Will the deviation required on the homeward route, for the purpose of embracing New Zealand, add much to the time occupied in the passage?—I do not think it will.

1887. You have already said that you believe that the vessels which are contemplated to be employed by the Pacific Steam Packet Company would be able to perform the distance in a less rather than a greater time than that which has been stated?—I think decidedly so. I am only surprised that they have put their estimate so low. When I spoke of it they told me that they did so to prevent the possibility of disappointment.

1888. Mr. *Stanley.*] You say that the isthmus is frequently crossed in 36 hours?—It has been. Capt. *E. Chappell,* R. N. 6 May 1851.

1889. Are you aware that the time of crossing depends very much upon the season of the year, and that in the rainy season the state of the roads produces much greater delay?—No doubt.

1890. Are you aware that two days are sometimes occupied in ascending the Chagres River to Gorgona, when that river has been swelled by the rains?—I believe so. It is on that account that when the railway is open to Gorgona, which is proposed to be done in July, you will avoid all the difficulty of the Isthmus of Panama. The whole difficulty now is comprehended in the navigation of the River Chagres, from Chagres up to Gorgona. Having got there, the canter by the mule down is not above three or four hours.

1891. Did I correctly understand you to say that you never heard of any complaints as to the inconvenience experienced in landing or embarking at Chagres?—We have heard complaints. What I said was, that we had never met with any instance in which goods or passengers have not been landed, or have not been embarked; complaints have been made of the discomfort of it.

1892. When the route from Navy Bay is opened, you will have no further communication with Chagres; the steamers will not touch there?—No, not at all. We shall be most happy to leave it.

Jovis, 8° *die Maii,* 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. Henry Currie.
Mr. Divett.	Mr. H. Berkeley.
Mr. Willcox.	Lord Naas.
Mr. Mangles.	Mr. Wilson.
Sir James Hogg.	Mr. Scott.
Mr. Plowden.	Mr. Bright.

VISCOUNT JOCELYN, IN THE CHAIR.

Captain Sir *Edward Belcher,* R. N., called in; and Examined.

1893. *Chairman.*] WHAT commission do you hold in Her Majesty's service?—Captain. Captain Sir *E. Belcher,* R. N.

 1894. Have

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1894. Have you been much employed in the Pacific Ocean?—I have.

1895. In surveys of the Pacific?—In surveys.

1896. Has your attention been called to the various proposals which have been before the public for opening a steam communication between this country and Australia?—It has.

1897. Have you considered the different routes which have been proposed?—I have.

1898. Which of those routes do you consider to be most advisable for that communication?—I should prefer that by Panama.

1899. Will you state to the Committee your reasons for preferring that route to either the Cape of Good Hope or the one by the Isthmus of Suez?—I think that the passage out is secure and smooth, and that the return is not liable to so many dangers, either to the machinery or to the vessel, as by either of the other routes.

1900. You are aware that it is the proposition of the Pacific Steam Navigation Company to carry out a communication from Panama to Sydney by means of screw steamers?—I am.

1901. Do you consider that that route is more favourable to screw steamers than the route *viâ* the Cape of Good Hope?—I think it is.

1902. What is your reason for that opinion?—I consider that by the other two routes you would have in most cases either the outward passage to perform before the wind, or the passage back dead against the wind, in either case with very heavy seas or with calm, as the case may be, and I think you are more subject to be influenced by the different monsoons; whereas in the Pacific I think in either case you would have a leading wind, which is the best wind always for a screw steamer, or you would have an opportunity on the return passage of having what is called a soldier's wind, and that the breezes which blow there would enable a vessel to go faster than she would even with strong breezes on the other side.

1903. In what years were you in the Pacific?—I have been in the Pacific from 1825 to 1829, and from 1836 to 1842 at different periods; I was a little time over the whole of the Pacific on the north line, and partially south to New Guinea through the Java seas.

1904. What portion of the American coast have you surveyed?—

veyed?—From Lima to 72° north, and over westerly to China and homeward.

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1905. Do you consider that there are any difficulties that a steamer would be likely to experience from winds on the western coast of South America, which might render it an uncertain passage at any period of the year?—Up to about the southern Tropic I consider that during the periods we were in those seas we might have carried royals at any time. I never saw a breeze which would prevent any vessel steaming head to wind and making an average, I should say, of eight knots, provided the wind was even on end.

1906. Have you been in those seas at all periods of the year?—Not at all periods, at different periods; at the worst seasons.

1907. What will be the difference between the direct route from Panama to Sidney which a paddle-wheel steamer would follow, and that of a screw steamer, taking advantage of the favourable winds, in the passage from Panama to Sydney?—I am not acquainted with Cook's Straits, or any part of New Zealand or New South Wales; I cannot speak as to the navigation of those seas further than from coming up near to land, and then diverging off into the China Seas in the meridian of 106°.

1908. Can you state the difference in distance that a screw steamer would run from Panama to Sydney, as compared with a paddle steamer?—If the company had a coal depôt at Gambier's Group, the distance across by Gambier's Group to Sidney would be 6,574 miles: here is a map of the direct route from Panama through Gambier's Group (*producing the same*); it would be further windward in coming back, which would be particularly advantageous to a screw steamer.

1909. In returning from Sydney to Panama, what would be the highest southern latitude that she would have to keep?—I think she might be compelled to go as high as 40°, but she might be enabled to make a passage in 35° or 36°.

1910. What point on the South American coast would she make?—I think there would be no necessity for her touching on the South American coast at all; I think she would reach from Gambier's Group, with a soldier's wind, to the Gallapagos; and from the Gallapagos up to Panama she would have calm or light winds, favourable, not adverse, under steam.

1911. What portion of each route would she have to steam?

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steam?—If she performed the voyage in the most advantageous manner she would steam at half-coal probably nearly the whole of the way, because a very slight impulse by steam on a vessel close-hauled, or with a leading wind, nearly doubles her velocity, or nearly adds one-third to her velocity; for even in common steamers, the worst steamers that we have, for instance, in the Irish seas in a heavy gale of wind, in which without steam I could not have made a knot an hour; under trysails, I beat five miles to windward in an hour.

1912. Where is it proposed that the vessel from Sydney to Panama should coal?—I should say at Gambier's Group.

1913. And where on the other passage?—Both ways at Gambier's Group she would get water; she could go in there in all weathers, and she could get refreshments there.

1914. Do you consider that both in her outward and homeward route she would keep nearly the same course?—No; I think she would run in the parallel of about 35° or 40° south, until she found that she could cross the south-east trade wind, with a leading wind to fetch Gambier's Group. That would lenghten her voyage just about as much as the proposed route by Tahiti would the other way; so that it would reduce the passage back to the Tahiti route or the Huaheine route; it would be 8,128 miles by the Huaheine route, and 6,574 by the other route. Huaheine is the Admiralty proposition; Huaheine being considered more a British possession than Tahiti. It is about a day's run further west.

1915. Would she have any difficulty in the Bay of Panama at any period of the year?—I consider none whatever.

1916. How near would the vessel lie to the shore?—The general anchorage of the ship which I commanded was a mile and a half from the north-east bastion of the city. I surveyed Panama myself, and this is my survey which I hold in my hand (*producing the same*). She would then be in three fathoms at dead low water at spring tides, the lowest known tides, and a pier might be thrown out to meet her about three quarters of a mile, extending from the fort.

1917. What is the rise of the tide in the Bay of Panama?—The highest known tide is 22 feet.

1918. What is the rise of the tide on the other side of the isthmus?—About three feet six the highest rise.

1919. There is a difference of 19 feet?—Yes; Colonel Lloyd's experiments make it, I think, at one time higher than the Atlantic, and at other times lower. The highest spring tides

tides on the Panama side are, I think, about three or four feet above the highest on the opposite side.

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1920. Are you acquainted with the east of the isthmus? —Yes.

1921. Do you see any difficulty there to a vessel landing her cargo at all periods?—Actually at Chagres I think there is, but not in Limon Bay; I have not surveyed Limon Bay, and my knowledge of it is only from the chart, and from what I have heard from others who have been there.

1922. You have heard that there is a proposal to carry out a pier in Limon Bay?—I have.

1923. Do you see any difficulty in a pier being carried out, such as is projected?—None.

1924. Have you heard likewise that there is a proposal to carry out a pier upon the Panama side?—Yes.

1925. Do you think that that may be effected with ease? —I proposed it in 1836 myself.

1926. Of what would that pier be constructed?—Of stone entirely; the reef is entirely of trap formation, solid stone; the reef would aid the breakwater or the pier about three-quarters of a mile; the reef extends off the shore, and is dry at low water; and in fact I did construct a boat pier for the purpose of landing at low water by filling up the gaps of the reef with stone, which I always made use of myself.

1927. Have you commanded a steamer?—I have.

1928. A screw steamer?—Not a screw steamer; I have been on board a screw steamer in a gale when we have been making 12 knots an hour, with the wind on the beam.

1929. From your acquaintance with steamers generally, do you consider that the communication could be effected in the time which is proposed by the company between Panama and Sydney?—I think certainly within that time. I think it might be shortened. I think they have given the extreme time; they have not taken into consideration the increased velocity by favourable winds either way. I think they have simply taken their estimate from the direct velocity under ordinary circumstances, with a head-wind; they have not taken into consideration the advantage of favourable winds, and the great velocity given to a screw steamer in going by the wind.

1930. Mr. *Mangles.*] You mean that their calculations are not favourable enough to themselves?—No, they have taken the extreme limit.

1931. *Chairman.*] As a seaman, what calculation would you make for that voyage in an auxiliary screw steamer; at

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what rate would you calculate it?—I think, with a screw steamer and a fair wind, I certainly could average nine knots on the passaage out, and I think the chances are that I should come back faster. I do not say that I could secure it, but I think the chances are that I might make a faster passage back.

1932. Supposing the passage was not made in the time expected, would not there be great inconvenience to the passengers arriving at the isthmus, and having to wait for a fortnight before they could go forward, taking into consideration the climate at some periods of the year?—It would depend upon the period that they gave for the return voyage.

1933. What allowance do you think they ought to make for the return voyage?—I think from five to six days at the extreme.

1934. Beyond the calculation?—Beyond the calculation, to guard against accidents. Considering that the American steamers now crossing the Atlantic with every difficulty average 10 days, and very seldom exceed 12, and sometimes under very heavy gales 14, I think there is little chance of any such difficulty in the Pacific.

1935. Is Navy Bay secure against violent northers?—I have consulted people who have been there, one gentleman who was long on the station, and who surveyed it, and he considers that a vessel may find shelter from any norther that blows into that bay, provided a breakwater is built. If a pier is thrown out, the vessel may lie safe within it. The scale on this chart is nearly an inch and three quarters to a mile, and the distance to run a breakwater out here into 24 feet would not be an eighth of a mile.

1936. Are not those winds which they call northers frequent during the season which is the least unhealthy, the dry season?—They are frequent.

1937. Is not there a shoal which has very little water when the tide is out?—Not where they propose to build this breakwater, as I understand; there would be 28 feet water at the pier head; that is, about a sixth of a mile from the shore. This is the Admiralty survey (*producing the same*), and I got my information a few days ago from an officer employed upon the survey.

1938. Is not Panama Bay exposed to the south-west swell of the ocean?—There is a slight swell, but nothing to impede boats landing at all times.

1939. Do not the south-westerly gales sometimes blow very

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very strong there?—I cannot find any person who ever witnessed one. I was there in the months of November, February, and March, and in two years during the heavy rainy season in November. We had variable winds and squalls, but I never had occasion to take my gallant sails in; and Captain Wood, also one of my officers, who afterwards succeeded me, and has been within the last few years surveying there under Captain Kellett, states that he has heard of such things, but has never experienced them.

1940. Is not the Spaniard's name for those winds "*Vandaval*"?—That means simply the rainy season, the variable season, the squally season, nothing more, as far as I can trace it, in the different Spanish works which I have looked into; and I observe in the "Columbia Navigator," that it is simply given as the term for variable winds, squally, rainy weather.—Spanish Dictionary of College. "Vendaval (Vent d'aval), vent fort qui vient du sud, et un peu de l'ouest. Latin, Auster; notus." Not particularly applicable to Panama, but wherever the south-west happens to be rainy or squally.

1941. Do not you think that unless those piers which are proposed were effected, there would be very great inconvenience in the shipping of goods on both sides of the isthmus, both on the Panama side and on the opposite coast?—I do not think it could be effected securely without them; along that whole coast they are in the habit of taking their cargoes on board by what they term "bongos" canoes, hollowed out of a species of cotton wood; and they could do it in that way by waiting for high water; but with a pier they could do it at all times of the tide; it would be equal to the London Docks.

1942. At the same time you admit that there would be great inconvenience to the shipping of goods until those piers were constructed?—No more than they would be subject to in most of the ports in England, because they would not have so many rainy days. There is generally fine weather, and cases of bad weather would occur probably three or four times in the year, not more. Those would be only extraordinary cases, such as a gale of wind in England.

1943. Were you in those seas in 1834?—No, in 1836.

1944. Do you recollect hearing of shipping being destroyed in the Panama Roads by a violent gale in the year 1834?—No; but throughout the Pacific the whole of the ports are subject to a roller in a calm, which will destroy every-

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thing before it, particularly upon the coast of Mexico and Mazatlan.

1945. Like the wave which they call the "bore," in the Bay of Fundy?—No; that is periodical, that is daily tidal: is supposed to arise from volcanic causes, which produce the roll in. At Mazatlan, in a perfect calm, sometimes eight or ten vessels are destroyed, some with every soul on board.

1946. Mr. *Currie.*] A heavy swell, without wind?—Yes; we lost a ten-gun brig to the southward of the Cape of Good Hope, at Tristan d'Acunha, with all hands on board, in a perfect calm; and those rollers tumble in at Panama, arising from the same cause. They have nothing to do with the weather; I never saw a squall off the coast of Panama, that would put a ship on her beam ends with all her sails set.

1947. Are those rollers periodical or uncertain?—Uncertain.

1948. Are they frequent?—They have occurred twice within my knowledge at Mazaltan; I have never experienced one myself.

1949. Where is Mazatlan?—In the Gulf of California, just to the northward of St. Blas.

1950. What is the elevation of those rollers?—From what I have heard in the account of those vessels that were lost, I should think they must be about 25 feet high; when a vessel is prepared for them, and takes them exactly stem-on, she may be saved, but not otherwise; a friend of mine was lost, with every soul on board, at Mazatlan.

1951. How do the currents go between Panama and Sydney?—They set southerly along the coast from Panama.

1952. Are they very strong?—They are not very strong; it depends very much upon the winds that have been blowing; at times a vessel may be driven about 60 miles out of her course; I think I was about 40 odd days between Panama and Gallapagos; sometimes I have found myself set a great way to the south-west; at other times I was set rather to the southward and south-east, but not at the rate that other people have stated. I passed over the same ground where other people have reported extraordinary westerly currents, and found myself going the opposite way; then I sounded in 1,200 fathoms, in a perfect calm, with the line up and down, and that proved that there was no superficial current. In the voyage of H.M.S. ship "Sulphur," Vol. I. p. 192, and following, I find from records, not from opinion: "April 18th, lat. 0° 30′ N., long. 90° W.; the winds and

and currents would not allow us to reach nearer the coast of America than 104° W. in lat. 22° S. At this point we took a breeze leading us up to Pisco, a day's run from the southward to Callao."

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1953. Can you state at what rate you were set by those currents?—I think the extreme set was 60 miles to the south-west.

1954. Mr. *Mangles.*] In 24 hours?—Yes.

1955. *Chairman.*] Is not the trade wind at times interrupted by westerly winds in the neighbourhood of the Society and Friendly Islands?—To the southward of them, a little beyond the Tropics.

1956. Do not you consider that such interruptions would interfere with the passage of a screw steamer?—I do not think they would; I do not think they are sufficiently strong, in fact she would make a leading wind of it till she got further south, or she might run further north; she would lie so close to the wind under the screw, she would run within four points of the wind; I do not think it would have any material effect upon her voyage.

1957. Are you considering that the vessel is burning fuel all the time?—Only light fuel; I consider that she is only burning half her coal when she is performing that sort of work; she would consume her whole coal only when she was making a direct set head to wind, and then, according to Mr. Napier's contract, he will impel the vessel eight knots against an ordinary breeze; I think if she chose to give up her canvas then she could average eight knots; I have seen a screw steamer in the Thames, against a very strong breeze, with the tide setting down, making great way up; full eight knots. I wish to make an observation as to velocity: I was instructed in 1836 by the Government to make experiments as to the consumption of coal, and a steamer was put under my direction entirely, making a long passage to the West Indies; she was running at the rate simply of seven and six, with all her steam, and no canvas set; we made sail, and reduced half her fires; we used only one boiler, and she only reduced six fathoms; she was going seven knots still, so that I am satisfied that with half fuel under canvas in those seas, a vessel would go very nearly equal to the velocity with which the contractor says he would drive them against a head sea.

1958. What tonnage is calculated on?—Anything over a thousand tons.

1959. What power to 1,000 tons?—About from a fourth to

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to a fifth of her tonnage. I consider that as soon as you arrive at 1,000 or 1,200 tons, the weight of the vessel is such that the velocity which is given by the engines to force the vessel under ordinary circumstances through the sea will not be much affected by the wind, her yards are so much out of proportion as compared with a smaller class of vessel. She was no spars to impede her; her own weight will keep up her velocity; she is not so easily affected by head winds.

1960. Have you crossed the Isthmus of Panama?—I have.

1961. In what season of the year?—In the month of February.

1962. Is the climate unhealthy?—It was very fine during that time; we slept out at night. I was, I think, 14 days travelling backwards and forwards from Chagres to Panama, measuring the meridian distance across with chronometers, and we carried overweights belonging to the party, amounting to 80 bales.

1963. Has traffic been carried on there during all seasons of the year indiscriminately, or only during the healthy parts of the year?—I can only speak from my own personal knowledge. I was there in November, February, and March, and in November it was the heavy rainy season, and we left it in consequence of the continuous rain which impeded our work, but there was nothing to impede the dispatches or goods that were sent to me from England; they came over in the ordinary time of three days.

1964. Did any of your people suffer from the climate during the time they were there?—None.

1965. Are you aware that the Americans have entered into a treaty with New Grenada for opening a line of railway across the isthmus?—I am.

1966. Do you know the line which is projected?—I do; part of my duty in 1836 was to report upon that line, and to report upon Capain Lloyd's survey for the contemplated ship canal through the isthmus.

1967. Do you consider that that line if once opened as proposed, will enable merchandise and goods to be carried across with facility?—Certainly.

1968. From your own acquaintance with that part of the country do you think there is likely to be any considerable trade between the Australian colonies and the coast of South America?—I know nothing of Australia, but I know the traffic from the southward and from the northward, and I have

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I have been lately in communication with the Americans, and I know their plans as to the traffic between California and the isthmus; and I think that although their railway is contemplated by the Gulf of Tehuantepec, the greater part of their trade will come to Panama notwithstanding; I think the expenses upon the Tehuantepec line will be so very heavy, that they will not submit to it; they may possibly send by the Nicaragua route, that would be cheaper.

1969. Mr. *Mangles.*] Do you mean cheaper than Panama, or cheaper than the other?—Cheaper than either I think; there would be such a very short distance to carry a line across on the Nicaragua route.

1970. *Chairman.*] In the Nicaragua route is not a ship canal proposed for a portion of the way?—It will be nearly the whole of it a ship canal; they would have to transfer the goods from the Lake of Nicaragua, and to carry them down the River San Juan.

1971. Are you acquainted with the schemes that have been before the public for opening the communications from one coast to the other by means of ship canals, and making use of the rivers?—Yes.

1972. Which of those schemes do you suppose is the one which would be most likely to be beneficial to the community generally?—I think the Panama route would be the most important.

1973. Are you aware whether there is any proposition now for carrying out any of those schemes?—They are carrying on both the Nicaragua and Tehuantepec schemes. I met the topographical engineers who were sent to commence the work in December last.

1974. How far have they gone with the Nicaragua scheme?—I think they are now carrying passengers between Realejo Lake, Managua, Nicaragua and San Juan. They have two steamers on the lake, and at present they carry goods down about 40 miles.

1975. You consider that that will be the cheapest line?—I think that will be the cheapest line.

1976. How far have they got with the Tehuantepec route?—The Government have only decided upon carrying it out, and have appointed engineers.

1977. They have not commenced the work?—They have not commenced. Officers have been employed upon it now for a year, marking the route out.

1978. Do you know anything of the treaty which has been entered into between the United States and the State

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of New Grenada?—I have not seen it; I cannot speak as to that.

1979. Mr. *Devitt.*] Have you given your attention to the schemes by Atrato, at a lower point of the isthmus than Panama?—I have.

1980. What do you think of them?—I was employed to draw up a report for Lord Palmerston about three years ago, upon all the different plans. As I had not been on that ground myself, I could only draw up a report pointing out in what way the thing was feasible, so far as appeared from the different reports that came before me. I should not propose that route.

1981. Do you consider a ship canal for very large ships feasible near Panama?—Not at all. I was sent to report on that, and I reported against it.

1982. Then the route which you do consider feasible is the one by the Lake of Nicaragua?—Yes.

1983. As a ship canal?—Not as a ship canal; as a joint canal and railway.

1984. You do not, at this moment, see your way to the practicability of a ship canal anywhere?—No; as to the possibility of a ship canal, I think it utterly impossible that they could ever carry a ship up, unless they cut a canal from San Juan to Nicaragua, and I think the nature of the climate would prevent that.

1985. Are the difficulties of the river navigation very serious?—The difficulties of the river I consider are insurmountable to a steamer; and if they deepen it they would drain the lake and lose the use of it.

1986. How would it be between the lake and the Pacific?—Between the lake and the Pacific I think there is every facility; they would only have 14 miles to lock up.

1987. Mr. *Currie.*] At the beginning of your evidence you stated as one of your objections to the route by way of the Cape, that there was a fair wind all the way to Australia, and a foul wind all the way back?—If the same route is to be followed; it is impossible to come back by the way that you go.

1988. You are aware of the south-east trades?—Yes; the south-east trade I think would be useful to secure a passage back.

1989. Does not the south-east trade blow regularly from the coast of Australia towards the Mauritius?—The vessel would have a long way to run before she met the south-east trade, and she would be liable to run along the coast of

of Sumatra, and to meet with Sumatra squalls; she would then have to run on to the Mauritius, and from the Mauritius round to the Cape; I should consider it a most uncertain passage.

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1990. Have you ever made the voyage yourself?—Yes, in part; I know it well.

1991. Is there not a fair wind on the edge of the trade wind?—A fair wind may be had, but there are heavy squalls and gales.

1992. Round the Cape of Good Hope and St. Helena, is there not a trade wind?—From the Cape to St. Helena I consider she would have a fair wind. I consider that the passage out and home by the Cape has not been correctly laid down, because I believe that it is a question of pilotage. I believe that a man thoroughly acquainted with the coast of Africa, and with the winds, could carry his vessel out to the Cape and bring her home again in five or six days less than what is now laid down. I went out myself, passed the eighth degree of latitude on the Equator to the eastward of Ascension, close to St. Helena, and on the fortieth day from the Cape de Verds I was in the latitude of the Cape. If I had been in a steamer, I should have got to the Cape easily in the time. But then I kept in soundings; I knew the banks, and I took advantage of the sea and land breezes along the coast of Africa till I passed the eighth degree.

1993. Are you of opinion that a screw steamer could not make the passage from Australia to the Cape, even with the advantage of the south-east trade wind?—I am talking of the course from Australia to the Cape direct.

1994. Mr. *Divett.*] What course were you considering, when in the early part of your evidence you alluded to the obstruction from the monsoon?—I think the whole run from Australia to the Mauritius would be a very doubtful course. I ran, in 1835, from the latitude of the Cape to St. Paul's, 4,300 miles, in 21 days, in the dullest sailing vessel in Her Majesty's service, and no steamer could have faced the breeze to come back during that time.

1995. You stated that in coming from Cook's Straits you thought you could make Gambier's Islands on the return voyage; we have it in evidence that Easter Island would be the point to be made. What is your opinion of that course?—I have been at Easter Island; and in the first place, there would be great difficulty in landing, and I think the coal would be very insecure from the thieving propensities of the natives. It would be the last place that I should think of

touching

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touching at. But I do not think there is any necessity for going so far; I think they would take advantage of the south-east trade up to Gambier's Group, and from Gambier's Group they would go through the trades into the variables, which would enable them to secure 8 or 8½ knots an hour. She would catch the south-east trade about latitude 30°. The south-east trade is not actually secured when she is at Gambier's Group.

1996. What latitude?—23° 7′.

1997. Will you have the kindness to trace on the map the course that you would propose to take from Cook's Straits to Gambier's Islands?—(*The Witness marked it out on the map.*)

1998. *Chairman.*] The calculation you have given is upon that route?—It is.

1999. Will you be kind enough to trace the outward route as well as the homeward?—(*The Witness marked the same upon the map.*)

2000. Mr. *Divett.*] Is not there an advantage in approaching Gambier's Group from the eastward, as compared with Tahiti, as far as the safety of the navigation is concerned?—Yes.

2001. You have a clearer sea in the neighbourhood of Gambier's Group than you have in the neighbourhood of Taheiti?—I think you have. Krugenstern's Chart:—But one island lies in the course, and its position would be well defined the first voyage, and assist as a leading mark. We have no right to imagine the South Seas studded with unknown islands. With respect to Tahiti, a glance at the same chart will exhibit the dangers between that island and Panama, which are known and not too well determined.

2002. *Chairman.*] Have you sailed in the Java seas?—I have.

2003. Are you acquainted with the north coast of Australia?—No.

2004. What is the nearest point to Australia which you have navigated?—Only through the Java seas; through the eastern passage to China by New Guinea; to Singapore, and through the pass to Batavia; but there are very strong trade winds blowing there, and the Dutch steamers which go from Batavia to Surabaya find very great difficulty in stemming the wind and current.

2005. Those winds would have to be encounted by a vessel coming from Singapore southward to Australia?—Yes;

Yes; the best course would be to go south-west of Java during one monsoon, and northward during the other.

2006. You say that your attention has been turned to the three routes which have been before the public. There is another route which has been marked upon the map, from Ceylon to Cape Leeuwin. Which of those four routes, taking them all into consideration, do you consider would be the shortest line to bring the Australian colonies into connexion with England?—If very powerful steamers were used, vessels of 2,000 tons, similar to the transatlantic steamers; they could run from Ceylon to Swan River. I consider that steamers similar to the transatlantic steamers would average 10 knots against anything, if they had that power, but I think it is requisite that they should be over 2,000 tons to 800-horse power.

2007. Are you speaking of paddle steamers?—Yes; I think it could be effected by steamers at that expense, but I do not think it could be by any other. I do not think that screw steamers would secure it.

2008. Would there be equal obstruction to a steamer that had to go to the Cape Leeuwin?—Yes.

2009. She would have to encounter the same gales?—Yes; I think she would have to go through a more doubtful line, more hurricanes and more doubtful weather. In speaking of any of the routes, I am speaking with reference to an absolute route at all times and at all seasons.

2010. For postal communication?—For postal communication.

2011. Though you yourself have not navigated those seas you are aware of the strong gales off Cape Leeuwin?—I have not myself experienced them, but I have heard them reported. In the year 1829 I went very closely into all the documents connected with the subject, as the Government then intended to send me to that survey, but owing to the death of an officer I was sent to the coast of Africa.

2012. You consider that a screw steamer would not be capable of making that passage during certain months of the year within any specified time?—I think not; I do not think she could depend upon it as matter of certainty.

2013. Have you sailed from Cape Leeuwin to Ceylon?—I have not, but I have been to Ceylon.

2014. Mr. *Currie*.] Have you ever sailed from Swan River to the Mauritius?—Never.

2015. Then the opinion you have formed is from what you have heard from others?—The opinion I have formed is

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is from running from the Cape into the meridian of 104°, and thence to Java Head, which is not far from the Australian route, and from there up to the Straits of Anjer.

2016. In the early part of your evidence you said that you had been in a screw steamer which went 12 knots with the wind?—Yes; that was a steamer from Neath to Bristol; she averaged about 12 knots the whole way.

2017. You were understood to say that you doubted whether a screw steamer could make head against any wind; you have never commanded a screw steamer yourself?—No; I cannot find any such opinion, because I state she would be contracted for to make eight knots against ordinary winds.

2018. Mr. *Divett.*] You know the Keeling Islands well?—I do.

2019. What do you think of the Keeling Islands for a coaling station?—I think they are perfectly good for the purpose.

2020. Some navigators have asserted that there is a difficulty in finding them; do you agree in that?—They must be bad navigators.

2021. If that has been stated by certain authorities here, you do not attach much importance to that?—Not the least, because any seaman could find them by his latitude; he could make sure of running within a degree or half a degree on either side of them, and then he could find them by his latitude; he must be a great lubber if he could not.

2022. There are some inhabitants there?—Yes.

2023. A sufficient number to enable people to procure fresh provisions?—Yes; they would get turtle and fruit.

2024. Is it a convenient place for a ship to coal at?—Certainly; a pier might easily be run out, and coaling performed with great ease.

2025. Mr. *Mangles.*] Were you rightly understood to say that you thought that the character of the weather in the Pacific gave great advantages to the Panama route?—Yes.

2026. Do you think that it would enable a screw steamer to command a higher average rate than could be commanded by a screw steamer of the same power by the Cape of Good Hope?—I think so.

2027. What amount of higher average do you think?—I think if you had a vessel of Napier's, which he contracted should go eight knots under ordinary circumstances, that with judgment on the part of the commander he may average 10 in the Pacific. If she were a ship of war, and he was bent

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bent upon chasing an enemy, and he was pressed up to his work, he would get 10 upon the average in the Pacific.

2028. That is, if she was chasing an enemy all the way from Sydney and Panama?—Yes. I believe that both companies have given a certain amount of full fuel for a certain number of days; with that quantity of fuel for that number of days, I think they would far exceed the average which either party has given.

2029. You mean by the Panama route?—By the Panama route.

2030. What do you think would be the average which a screw steamer would attainacross the Indian Ocean, from Sydney to the longitude of the Cape of Good Hope?—I know nothing of the voyage between Sydney and Swan River; I cannot at all say what the passage would be there; but I think that from Swan River to the Cape of Good Hope I should be very sorry to try it.

2031. Mr. *Wilson.*] You mean in a straight line?—Either a straight line or going further south.

2032. Mr. *Mangles.*] What do you think would be the average speed attainable by a screw steamer taking that route in a straight line?—I think it is impossible; I do not think she could effect it.

2033. Mr. *Wilson.*] How high would a vessel have to go to the northward in order to get a favourable wind up to the Cape?—She would have to go to the Cocoas, and from the Cocoas to the Mauritius, and from the Mauritius to the Cape, to make sure work.

2034. *Chairman.*] What latitude would she go to before she got to the trades?—She would go up into 20° before she would find a trade that she could do anything with.

2035. Lord *Naas.*] She would go up on her return voyage almost to the latitude of the Mauritius?—Rather to the northward of it.

2036. Mr. *Mangles.*] What is the reason why sailing vessels coming home from Australia almost invariably come by Cape Horn, and not by the Cape of Good Hope?—Because they experience south-westerly gales; they do it for the same reason for which they run from the Cape of Good Hope to Van Diemen's Land and Swan River by the direct course; there is a fair wind all the way. On the other side it prevails just to the same extent; for instance, in rounding Cape Horn we go rather to the southward and meet the south-west gales, and that carries us up to Valparaiso. We run as far down as 60° in going round.

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2037. Do you think that a fast-sailing vessel coming home from Sydney by the Cape of Good Hope would be at home as soon, or nearly as soon, as a screw steamer coming by the other route?—I think she would.

2038. Mr. *Wilson.*] Can you tell the Committee in round numbers what is the difference of distance between the voyage homeward round Cape Horn and the route by the Cape of Good Hope?—I have not the distance computed, but I believe that a sailing vessel would get home from Van Diemen's Land, or rather from Wellington, round Cape Horn, long before a steamer would get home by the Cape. One of our dull sailing frigates went from Lima to Spithead in 84 days; she ran away with freight, and was determined not to meet the admiral, or any superior officer. If she could make that run in 84 days, you must allow her full 24 out of that before she could have got to the Cape, consequently to get home in the same time by the Cape, she must have come from the Cape in 60 days.

2039. Mr. *Mangles.*] In whose hands is the Gambier Group of islands?—We took possession of them in the name of the Queen in 1825, and went through the usual forms; but they have now French missionaries there, as I understand.

2040. Is there a considerable native population?—I suppose there are about 7,000 people.

2041. Are they friendly?—They are friendly.

2042. There would be no difficulty as to coaling or victualling there?—Not the least, I think.

2043. Are refreshments obtainable there?—Since 1825 I dare say the Frenchmen have taken out seeds and plants, and that by this time the island is just as well provided as Tahiti; it is a very rich soil.

4044. Have they not the vegetables of the climate?—They have cocoa nuts, bread fruit, and things of that sort, and fish.

Robert Lowe, Esq., called in; and Examined.

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2045. *Chairman.*] WHAT appointment do you hold in the colony of New South Wales?—I hold no appointment, but I have been a member of the Legislative Council from when it commenced in 1843 till the time when I left the colony in the beginning of 1850. During the last years of my residence there I represented the City of Sydney, which is the largest constituency there, having as many as 3,000 electors.

2046. Are

2046. Are you acquainted with the views generally of that part of the colony with which you were connected as to steam communication?—I am. *R. Lowe, Esq.* 8 May 1851

2047. Can you state to the Committee what the views of the colony generally are upon the subject of steam communication?—The general view of the colony of New South Wales was decidedly, when I left, in favour of steam communication by way of India, through Torres Straits.

2048. You are speaking of the Sydney colony?—I am. I do not attach much weight to the opinions of the different colonies, because really and truly it is a question of local selfishness between them. You find that in Sydney the people are in favour of anything that they think will bring the steam line to Sydney. The people of Adelaide and Port Phillip are, in the same way, favourable to anything that will bring it to Adelaide or Port Phillip, and none of them look much to the general advantages of the colonies. But the feeling at Sydney was decidedly in favour of Torres Straits, and the Legislative Council repeatedly pronounced that opinion during the time that I was a member of it.

2049. Do not you consider it most important that in making any arrangement the general welfare of all the Australian colonies should be considered, and not the advantage of one particular colony?—Decidedly, and therefore it was that I made that remark, because though no one is more anxious than I am that the wishes of the colonists should be consulted on colonial matters, I think that in a matter like this, where a number of colonies are to be considered, it is possible to attach too much weight to their opinions one way or the other; I am sure that the question is not looked upon with reference to its real merits by any of the colonies, but they all look at themselves as competitors for an advantage, and what they consider is not how it can be fairly divided among them, but whether they can get it themselves.

2050. Do you consider that if the proposition of the Sydney people had been carried out, the general wishes of the colonies would have been satisfactorily met?—I apprehend that it would have pleased the Sydney people, and would probably have displeased the people of Adelaide; the Port Phillip people, I think, inclined also more to the Adelaide than to the Sydney view.

2051. Would such a line of communication have given facilities to the southern colonies for their postal communication?—It would have done so to some extent; but I would

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would very gladly have seen it more equally divided; I think it would have given Sydney a great advantage to be the first port of arrival and the last of departure; but at the same time I think it could be so arranged that they would all participate in the benefit; it would take about a week to steam from Sydney to Adelaide.

2052. Have you turned your attention to the three routes which have been under the consideration of the Committee, the Panama Line, the Cape Line, and the line by Singapore? —I have.

2053. To which of those lines are you favourable?—I should mention that I have no interest in any company whatever. I have pecuniary interests in the Australian colonies, in Sydney and in Adelaide. My pecuniary interest in Adelaide is rather larger than my pecuniary interest in Sydney, and therefore I stand in some degree impartially between them, but having considered the question as well as I am able, my impression is decidedly in favour of the Panama route.

2054. How long have you come to that conclusion?—It was not my opinion while I was in the colony. I then shared the general impression, which I see by the papers as late as September 1850, was the impression of the Legislative Council, and which was maintained by very competent judges, such as Captain King, who surveyed the coasts of the Australian continent, Captain Blackwood, and the late Captain Owen Stanley, who were all in favour of the Torres Straits route. That opinion was entertained by myself and by other colonists in ignorance of the facilities afforded at present for crossing the Isthmus of Panama. I have, myself, changed my opinion since coming to England, upon seeing more of the real nature of the case with reference to the Isthmus of Panama. Not only myself, but two very intelligent gentlemen who arrived in England within a week or two of myself, have come to the same conclusion. Mr. Archibald Michie, a barrister, has informed me that he has come to that conclusion; and there is another gentleman who has been before the Committee, Mr. Bogue, who was strongly impressed the other way, but who changed his opinion upon coming to England. I am now decidedly in favour of the Panama route.

2055. Have you changed your opinion solely upon the ground of railway works having been commenced across the Isthmus of Panama?—There are a number of grounds which did not strike me so forcibly at first; that is one very

very great reason; another is, the acceleration which is to take place, as I understand, in the vessels of the Royal Mail Packet Company, which are to be accelerated so as to reach Chagres in 19 days instead of 23. There are also other grounds, but the principal ground was the great forwardness of the railway works over the Isthmus of Panama; it is not a place in which I should like to be detained; it is not a good climate, and it is an uncivilized country. We had in the colony a false estimate of the voyage; we fancied that it was much longer than it appears to be according to the nautical authorities here; we had no idea that it was shorter than the other route.

2056. Do you consider that by the Panama line any merchandise would be carried?—Not to any great extent; my notion of the Panama line is, that it would be a good line for carrying letters, equal if not superior to any line that could go by India, and very superior to any line by the Cape. As regards letters, I think it is as good as any line, and I believe better, because I believe it would be shorter and quicker than any other line that could be adopted. Then as regards passengers, I believe that no passengers would go by the Singapore route, except a few persons coming from India and returning to India; and I believe that by the Cape none would return. I do not believe that people would venture upon the home voyage by the Cape; a good many would go out by the Cape, but in coming home I believe that all the passengers except emigrants (who I do not believe will ever be carried by any steam communication) would go by the Panama route.

2057. What is your reason for thinking that the line *viâ* Singapore would not be made use of by passengers?—The great expense and the frequent transhipment; the people in Australia are very poor, most of them, and look very much at extra expense; and as they can go home now by a very good ship, with first-rate accommodation, by Cape Horn, for about 70 *l.*, people would not, for the sake of saving some 30 days, go to the expense of the Singapore route; when I enquired about it, I found that for myself and my wife it would cost me something like 500 *l.* to go home in that way, instead of which I got home very comfortably for a little more than a third of that sum, and I came in an excellent ship.

2058. What is the passage by Cape Horn at a favourable period?—I was 103 days; that is a favourable passage. But I am convinced that if the Cape route were adopted

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for the steam communication, the passage by Cape Horn in a sailing vessel would be chosen by the colonists, in preference to returning by the Cape by steam; I should prefer it myself.

2059. Are there any periods of the year now, when no ships pass round Cape Leeuwin?—There is comparatively so little traffic that I cannot answer the question. I am not aware of any period when ships consider it impossible to do it; there is not a great deal of trade there. Our principal commerce with India is in horses; those always go by Torres Straits in order to get smoother seas. The ships that go by Cape Leeuwin are generally ships that go from Sydney in ballast, seeking for cargoes in India or China.

2060. Do not you think that there would be a considerable quantity of merchandise carried by the Cape line?—There would be some carried going out undoubtedly. There are certain things that are very subject to injury in a long voyage in the Tropics, and no doubt they would be carried out by steam by the Cape line; and it is possible that some of those things might be carried out by Panama, but that is a subject rather out of my knowledge. I am a lawyer, not a merchant, and I could not speak with any confidence upon it.

2061. Can you give the Committee any opinion as regards the importance of the communication with India, in a mercantile point of view?—I believe it is very important; not however so much so with reference to what it is at present as to what it may be. The export of horses, I think, there is every probability of increasing; there is the export of copper also, which seems likely to be considerable from Adelaide. As the countries are very dissimilar to each other, and they produce very different things, I believe that it is likely that a considerable trade will spring up between the Australian colonies and India.

2062. Do not you consider that a line which would give to the colony not only communication with England, but at the same time communication with India, would be of very great importance?—I do indeed; I think it would be a most excellent thing for the Australian colonies to have a line with India; but I cannot blind myself to the fact that that line will carry no passengers between Australia and England, and I look upon that as the great object next to the postal one. I have property in Australia, and therefore look to the possibility of being obliged to return, as most people are obliged

obliged to do who have property there, to look after their agents, and I should never think of going by India. *R. Lowe, Esq.* 8 May 1851.

2063. How would you go?—I should go by Panama, if it were open, or if the Cape line were adopted I should go by that; but in coming home I should prefer coming by a sailing vessel, by Cape Horn. I am convinced that the Cape line never can run backwards and forwards with perfect regularity, be the steamers as good as they may be, because nine months in the year the wind blows furiously from the west, between the Cape and Australia; the other three months it blows with almost equal violence from the east; in the one case you would have the wind run all the way with you, in the other all the way against you; you would have it almost always either quite foul or quite fair.

2064. Mr. *Divett.*] Have you made the voyage from Cape Leeuwin to the Cape of Good Hope?—No, I believe that ships hardly ever return that way, and that if they do they generally make a very bad passage.

2065. Your objection to that route applies to the homeward voyage, not to the outward?—To both; it is a great mistake to suppose that the winds blowing there are uniform; some months it blows very violently from the east, and then the outward voyage would be very difficult; it is an immense space of sea, there is no place to call at; it is a desert coast upon the western side of Australia; it is a great undertaking to take people such an immense distance with a very rough sea, and very heavy weather very often. When I went from the Cape we averaged something like 240 miles a day, with a westerly gale blowing right aft and with a very high sea.

2066. *Chairman.*] You stated that in your opinion the great object is to give a communication between Australia and the mother country, which should be beneficial to the colonies in general; are you aware of the proposals of the Pacific Steam Packet Company?—Yes.

2067. Do you know that their line finishes at Sydney?—Yes; I am aware of that.

2068. Do you think that a line such as they propose to Sydney, with branch steamers from Sydney to the other Australian colonies, would be satisfactory to the western colonists?—I cannot think that it would be satisfactory to Adelaide; I am certain that nothing will satisfy Adelaide except either the line by Cape Leeuwin from India, or a line by the Cape of Good Hope, and either of those would be equally unsatisfactory to Sydney.

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2069. Why should Sydney be dissatisfied, supposing that the steamer by the Cape of Good Hope or from India by Cape Leeuwin, went to Sydney as her ultimate point?—Merely from selfishness; they think that it would give a preference to the colony that might be the first to be reached and the last to depart from; I do not think the feeling is entitled to the slightest weight.

2070. At the same time could not such a communication meet the wishes of the colonists in general?—I cannot think that any communication will satisfy the colonists in general; I am afraid that whatever Parliament resolves upon, they must dissatisfy half the colonists.

2071. But such a communication would have the effect of bringing the whole of the colonies into communication with the mother country, either by the Cape or by the Indian communication *viâ* Cape Leeuwin?—Yes.

2072. Yet it seems that you prefer the Panama route, which only proposes to connect the mother country as far Sydney, leaving out the western ports of Australia?—I am not, of course, prepared to defend the particular arrangements of the company, nor do I know exactly the amount of accommodation they can give; but I am quite convinced that the Cape line would not ultimately prove satisfactory to any of the colonies, because I do not believe that it would effectually remedy the present uncertainty of communication; and it certainly will not be satisfactory to Sydney. I do not believe it will satisfy any of the colonies. What has occurred to me upon the subject of the Panama route is this: that possibly the fairest way would be to make the terminus of the route Port Phillip, and to have a branch communication to Sydney on one side, and to Adelaide on the other; I think it might be so arranged that there might be branch communications to and from Sydney and to and from Adelaide, both meeting at Port Phillip; I believe Port Phillip is more remote from Sydney than it is from Adelaide, or it might be advisable to make New Zealand the point of departure of two lines, one running to Sydney, the other to Victoria, Adelaide and Van Diemen's Land.

2073. Mr. *Divett*.] Have you any objection to give your opinion as to the probable comparative progress of Melbourne and of Sydney?—My own opinion is, that of the three great Australian colonies, the one that is now decidedly the most prosperous, and is likely to increase the most rapidly, and has the best prospects altogether, is undoubtedly Port Phillip;

Phillip; as to the second rank, I should not give much preference as between Sydney and South Australia. There are circumstances in Sydney that will interfere materially with its prosperity, particularly the premature occupation and alienation of its lands by those who are now depasturing them; Adelaide, on the other hand, has great mineral resources, but not much pastoral land. Prices are now much lower in Sydney; so much so, that between Sydney and Adelaide there is the difference between 8 per cent. and 20 per cent. in the interest of money. Under these circumstances, I cannot help thinking that though Sydney is not so much a favourite in this country, yet, seeing that it has very low prices and more moderate notions, it is in a safer and more satisfactory condition than Adelaide.

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2074. You mean that the business in Sydney is sounder?—Yes, on that ground, that the prices are lower, and the interest of money is lower. The colonists have had a very severe lesson; they are cured of that speculative spirit which I am sorry to say is now rife in Adelaide. A great many people there, instead of turning their minds to any useful occupation, spend their lives in dealing in shares; they have a sort of Capel-court there.

2075. Can you shortly state the particular advantages which Port Phillip possesses?—The prosperity of Port Phillip rests not on mining, but on the country; Port Phillip is a pastoral country, having capabilities of being, one day, converted into an agricultural country. New South Wales is also a pastoral country, but a great deal of it will not for centuries, and probably never, be other than a pastoral country. The climate of Port Phillip is also cooler than either that of Adelaide or Sydney, and the land is also more fertile; therefore I see at Port Phillip a probable ground of increase that I do not see either in Adelaide or in Sydney. In Adelaide the land is limited.

2076. It is the centre of a large population?—It is; of course now the preponderance of population is enormously on the side of Sydney.

2077. *Chairman.*] Can you state what is the extent of the trade as between New Zealand and Sydney?—It is very considerable.

2078. Is it increasing?—I think it is. The trade depends principally upon three things: first, to supply Her Majesty's forces. There are 3,000 troops in the northern island to keep the natives in order; a good deal is supplied by New Zealand itself; in fact it is a sort of annuity, upon which the settlers

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settlers live. That first cause of course will cease whenever it pleases the Home Government to withdraw the troops. The second cause is the importation of stock, chiefly cattle and horses, into the island for persons who are settling in the interior. As they become supplied that also will, I think, come to a conclusion. The third branch of trade consists of miscellaneous articles required by the colonists themselves. Sydney is a great entrepôt of merchandise, and almost anything that they require can be obtained there. There is a great deal of miscellaneous trade there in supplying the wants of a young community like that of New Zealand.

2079. The sum of 6,000 *l.* was voted by the Council of New South Wales for the line by Torres Straits; do you suppose that if any other line were established any such sum of money would be voted by the Council?—I think they would vote it as cheerfully, or more cheerfully, for the Pamana line, provided it went to Sydney first. I think that the same feeling of selfishness which induced them to grant the money for the Torres Straits line alone would induce them to grant it for the Panama line in that case.

2080. Do you think that the other colonists would vote sums of money for the Panama communication?—I am not not sufficiently acquainted with South Australia to say. As to Port Phillip, I have no doubt that any communication which made Port Phillip its point of arrival and departure would be met most liberally.

2081. Mr. *Mangles.*] As it is impossible to please all the colonies, does not it appear that Port Phillip should be selected as a central point?—That is my opinion; as to the Panama route, it would lengthen the journey, as Port Phillip is in 38° south latitude, and Sydney is in 34°; but the parallax would be very small, if you were starting from the Isthmus of Darien.

2082. From Cook's Straits does not it appear to be very little further to Port Phillip than to Sydney?—Very little, if at all. Everything that I say here I am aware will be canvassed by a great many good friends and warm enemies that I have in Australia, and I am anxious to give an opinion that will show that I am desirous of doing the best for all the colonies; and I believe that for that purpose Port Phillip is the best point and the natural point.

2083. It is close to Van Diemen's Land?—Yes, the voyage from Sydney to Van Diemen's Land is a very long one; I am disposed to think, that whatever scheme is adopted, Port

Port Phillip is the point at which the arrival should be, if it is to be the same scheme for coming and going.

2084. *Chairman.*] You consider that whatever line is carried out, Port Phillip should be the terminus?—There is only one exception; I have seen a proposition for a communication from the Cape of Good Hope to Adelaide and Port Philip and Sydney, taking the colonies in succession; in that case, of course it would be right to take the colonies in their natural order.

2085. Can you speak as to the trade that exists between South America and Australia?—I do not think there is any now; they have had a considerable trade in horses, very much to the detriment of the breed of horses. They imported mares from the Pampas and crossed them with English horses; but that trade soon ceased, and it would have been better if it had never existed. At one time there was a large importation of corn; prices were very high in Sydney, the interest of money was very high, profits were nominally extremely large, and there was a redundant influx of capital from England, and they imported a great deal of corn from Valparaiso. I was present at a debate in which it was proposed, by imposing a protective duty upon corn, to protect the agriculture of Australia from the competition of the Spanish republics of South America; that was carried by the Council, but negatived by the Governor: but shortly after that the Australian colonies so completely undersold the South American States, that that trade has ceased, and there has been no corn imported since 1844. The only trade I know is that of ships in ballast that go to Peru for guano.

2086. Do you know anything of the trade with California?—There is a considerable trade, but it has been, I am sorry to say, chiefly in emigrants.

2087. Mr. *Mangles.*] Is there not a considerable trade in coal?—I am not aware of it. At one time California emptied the whole town of Sydney of goods that were lying in the shops.

2088. Mr. *Divett.*] You are aware that there has been a wish expressed that emigrants going from England should be put under some restriction as to the repayment of their passage-money in the event of their emigrating to California?—Yes; when that subject was discussed I was present at the Council.

2089. Do you think that practically such a plan could be carried out?—It would be attended with much difficulty, I think;

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think; perhaps the moral effect would be the best. I think that if those people were told that they should not do it, many of them would not. I know most flagrant cases of a breach of the understanding under which emigrants were sent out; I know of a man who was sent out as a bounty emigrant from England in the beginning of 1849; he went back again directly to England as steward or cook of a ship, and then came back to Sydney again as a bounty emigrant, and then went immediately to California; so that the colony paid the man's passage twice in the year, and got no benefit from him at all.

2090. In the event of the Panama route being adopted, what would be your view as to improving the communication with India?—I hope the day is not very remote when we shall have steam communication with India. I apprehend it must arise in course of time, but I am not prepared to say that there is either sufficient commerce, or the probability of sufficient passenger traffic to cause it to be undertaken at present as a commercial speculation. There would be some people come to the Australian colonies for health. That might easily be over-estimated; they offer great attractions as far as regards cheap living, but there is not much amusement, or anything of that sort.

2091. You think that no steam route is likely to be used as an emigrant route?—I feel perfectly convinced of it; it would always be cheaper for them to go by sailing ships. They have talked about taking emigrants at 10 *l.* a head. The space in steam vessels would be more advantageously filled by merchandise, reckoning what they could eat and drink on the passage.

2092. Mr. *Currie.*] When you went from the Cape to Australia, do you recollect in what latitude you were?—We went as ships usually do, about 41° south; six or seven degrees south of the Cape of Good Hope.

2093. Have you ever been in a screw ship?—Never.

2094. Mr. *Mangles.*] We have it in evidence that the passage-money by Singapore would be 180 *l.*; we have also in evidence that the passage-money proposed by the Panama route would be 105 *l.* for first-class passengers, and 50 *l.* for second-class passengers; do you think that circumstance would give a great superiority to the one route over the other?—I am perfectly convinced that no passenger, and I am sure nobody in Australia, ever thinks that any passenger would go to England, except now and then a chance passenger, by the Indian route. I believe that if the Panama

route

route was adopted at those prices, and if it performs the route with the regularity that we have reason to expect, every cabin passenger between the Australian colonies and England, going and coming, and most intermediate passengers, would go by that route.

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2095. You think that 50*l.* would not be high enough to deter respectable intermediate passengers?—No; there are ships that take passengers at 20*l.*; those would not go; persons with large families would not go; but all persons that answer to the description of cabin or intermediate passengers would go by Panama. There is one great inducement to people who have been living in a warm climate, and that is the warmth of the voyage. The voyage by Cape Horn is extremely cold, and very few of the ships are provided with fire-places. I suffered very much from the cold when I came in February, which is one of the warmest months.

2096. You said that the Panama route was not in the contemplation of the colonies when they gave a decided preference to the Indian route?—They thought of it, but they did not understand the real bearing of the question.

2097. They did not understand the way in which the communication was proposed to be effected?—No; they heard of great difficulties in crossing the isthmus; they did not know how the isthmus was to be crossed.

2098. Mr. *Willcox.*] You have stated that on inquiry you found that the conveyance of your wife and yourself by steam from Australia by India would cost you about 500*l.* Now as there is no steam communication between Singapore and Australia, and the passage-money to Singapore is only 143*l.* at one part of the year and 123*l.* at another part of the year for first-class passengers, how do you arrive at the sum of 500*l.* for two persons?—I am not speaking of my own knowledge; it was from such information as I could derive in the colony. I was in Australia seeking to return home, and I was inquiring about the expenses of the route. Of course there would be added to that expense the passage to Singapore, which I was informed was about 40*l.*, and I was informed that there were great incidental expenses on the route, which would considerably increase the sum which was put down for the passage-money.

2099. But adding 40*l.* to 140*l.*, and multiplying that by two, does not come to 500*l.*, nor anything like it?—No; I am not giving my own information, but information derived from people who had made the passage themselves. But even

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even putting it at as low a figure as that, it would effectually deter Australians returning from the colony.

2100. Mr. *Wilson.*] Do I rightly understand you to say, that you attach more importance to steam communication with the Australian colonies on account of postal purposes than with reference to passengers?—I think perhaps that the postal communication is the most important, but both are very important.

2101. You said that you thought that by the Cape route the amount of passenger communication would be comparatively little?—They would carry a great many out at the time of the year when westerly winds may be counted upon, but I do not think they would carry many home. The impression in the colony is very strongly against any attempt to make the home voyage by steam in that way, and I believe that if the Cape route were adopted they would carry more passengers if they went round by Cape Horn.

2102. Unless experience were to show that the opinion now entertained with reference to the return by the Cape was erroneous?—Yes.

2103. Or unless the difficulty could be got over by means of steam?—Yes.

2104. With reference to the Panama route, do you see any difficulties in that as a passenger route corresponding to the difficulties which you have suggested in the other route?—No, I have had opportunities of communicating with almost every captain of a ship in the navy who has come to Sydney during my residence there, and they represent the weather in the Pacific Ocean to be of the most temperate and delightful description. There are difficulties I know; during the winter months in Australia there is a westerly wind blowing off the land, with which the vessel would have to combat; but that wind is not of that sort of violence that would stop the vessel, the vessel being under the lee of the land; on the other hand there is the trade wind to the north east; that also is a difficulty that a steamer would not find any difficulty in surmounting; they neither of them amount to violent winds, for the greater part of the passage they would have what is called a soldier's wind.

2105. Your opinion is, that with reference to passenger traffic out and home, the Panama route would answer both purposes better than any other?—I am of opinion that as to going out, the Panama route would have some advantages over the Cape route, but in other respects the Cape route would have the advantage, particularly in there being no transhipment,

transhipment, which I admit is of very great importance. I put the Indian route out of the question, because nobody would go by that; in coming home I believe that the Panama route is the only one that would carry any passengers.

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2106. You are still of opinion that postal communications are more important than passenger traffic?—I am inclined to think that they are. Everything being at present managed from home, every Act going home to be affirmed by Her Majesty, it is the greatest possible evil, both to the colony and to the mother country, that so long a period must elapse before things can be done, because the time is so long, that when the home Government have come to a decision, and the information arrives in the colony, circumstances have often changed, and the measure is no longer applicable. I have had a great deal to do with the management of the Government of the colony as a member of the Legislative Council, and I cannot exaggerate the necessary evils and the necessary misunderstandings and bad feelings that are generated simply by reason of the long distance to this country, and the great length of time that elapses in the communication.

2107. You think that in establishing a communication with Australia there are grave political considerations which give the greatest importance to postal communications, altogether independently of commercial considerations?—I am certain that it is impossible to exaggerate the weighty political considerations as regards postal matters. It is more important to the colonies than all the constitutions you can give them, or all the regulations that you can make for their benefit. I think if you mean to maintain those colonies, you must either absolutely abandon to them the whole of the government, or else you must shorten the distance; people cannot wait; the larger the communities become, the more impossible it is to wait. I will mention an instance. A railway company was formed in the colony, and the colonial government was willing to give to the company the land along the line for making the railway, which would save them great expense; but that could not be done without the sanction of the home Government, consequently the undertaking waited a year while that sanction was obtained. In the mean time people having a year to look round, local interests were got up, and people had time to quarrel, and such a spirit of dissention and disunion got into

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nto the company before it got to work, that I am afraid it may fall through altogether.

2108. Then you believe that important as steam communication is in both respects, it is considerably more important with reference to postage than with reference to passengers?—In a political point of view, it appears to me to be principally important in respect of postal communication.

2109. Have you carefully taken into consideration, in looking at the importance of postal communication, the effect which intermediate communication by the various lines would have upon the interests of Australia, particularly with reference to the very great commercial communication between India, Singapore, China, and Australia, compared with any communication which ever can exist between the Cape and Australia, or between Panama or South America and Australia?—I am quite convinced that sooner or later there must be steam communication between India and Australia: but I think that at present, notwithstanding the considerable nature of the trade, it is far more important to them to have the best and most rapid communication with the mother country than to have any communication with India. Great as the advantages no doubt are, of communication with India, I do not think it worth while sacrificing the passenger traffic to that. I believe the postal traffic would be shorter by Panama, and I believe the passenger traffic would be better by Panama; in fact, it would be the only efficient traffic.

2110. You believe that the postal traffic would be shorter by Panama?—I believe it would; I believe it would be 75 days by Singapore and 61 or 62 by Panama.

2111. The Panama route would give you no intermediate traffic?—Not except with America.

2112. Nothing to be put in comparison with the importance of the other route?—I set against that in some measure the colony of New Zealand, which by any other route than the Panama route would be left out of the system. I am of opinion that when that colony shall cease to be a depôt of British troops, it will not be able itself to support, nor will Government be able to support without a large outlay, steam communication to correspond with it. I believe it will be found that New Zealand cannot advantageously run steamers.

2113. Can you anticipate any alteration which can take place in future in the relative positions of New Zealand and Australia

Australia which can be at all equal to the probable increased communication between India and the Indians seas, and Australia?—I could not pretend to answer that question; but new Zealand is our own colony, it is a colony which has cost this country a vast deal of money, much more than it would cost to set up two or three steam routes to Australia; and it is a colony which must, from its own inherent deficiencies, be very closely connected with Australia. I believe that New Zealand will ultimately look more to Australia than to England for its supplies. If I understand the state of New Zealand correctly, I do not see that at present they have any exports which they can send to England, and it is of great importance that they should be closely connected with the Australian colonies; I believe it will make a great ultimate difference in their destinies whether they have close communication with Australia.

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2114. In proportion as the communication between New Zealand and Australia becomes important, would it not enable them to sustain a branch steamer?—I cannot look forward to that result within any reasonable time. The population of New Zealand is extremely small and scattered, and the settlements are divided from each other by mountains, and only accessible by sea, so that it would be difficult for them to combine for any such object. I do not believe there is any prospect in a reasonable period of any such thing, but I do think myself that in a short time there will be steam communication with India, whether it is established by the Imperial Government or not.

2115. Viewing it in a postal light only, supposing you were only to have one steam communication between Australia and the mother country, looking at the general interests of the Australian colonies as a whole, commercial and political, which of the three routes on postal considerations only should you think the most important?—I should think the Panama route to Port Phillip, because it seems to me that that would give fair play to all the colonies; it would comprise them all. The steamer would come to Port Phillip, and it would start again from Port Phillip, carrying back letters from all the colonies. That I believe can be done by no other route. If you made Adelaide the terminus, and the steamer were to go on to Sydney and return the same way, there would be an immense waste of time.

2116. The question has not reference so much to the relative interest of the different colonies as to the general interests of the whole of the colonies. If there was to be but one

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route for postal purposes, would you consider the route by India, or the Panama route, the most important?—I should prefer the Panama route.

2117. Mr. *Divett.*] I understand it to be your opinion that it is of paramount importance that the course of the post between England and the Australian colonies should be reduced to the shortest possible period?—It should be accelerated as much as possible.

2118. You consider that object paramount to all the others?—I think it is the most important of all.

2119. Sir *J. Hogg.*] You are thoroughly well acquainted with Australia and its resources?—I am; at least I have had a great deal to do with it.

2120. And you are equally well acquainted with the wishes and desires of the inhabitants generally?—Yes; I never was in Adelaide, but I think I know the wishes of the people there; I have read all the papers, and I have conversed with gentlemen from that colony.

2121. Are you of opinion that the communications, passenger as well as postal, between Australia and the mother country, and between Australia and India, are separate and distinct questions to be separately provided for, or are you of opinion that they are one and the same, and ought to be provided for by one and the same means?—I consider them as separate questions, but I also consider that of course if Australia could be equally well served *viâ* India, an additional point of great importance would be gained, but I consider that it cannot be so served. I consider that it can only be served *viâ* India, by a sacrifice of the whole passenger traffic, and by some sacrifice I believe in the period of time required for the conveyance of the mails.

2122. It is your opinion that it is an object of paramount importance to have a rapid communication between Australia and the mother country?—Yes.

2123. Do you think that the commerce of Australia is such as to enable it to support a communication by steam between Australia and the mother country, and also a communication by steam between Australia and India?—I do not think so at this moment, but I think the time is very rapidly approaching when it will be so, but I do not think it is come yet, the number of people is so small. I think the colonies are very rich; their revenues are very large, and if they were alive to their interests, I dare say they would not spend their money foolishly in establishing such a communication. But there are many different interests in the colony;

colony; some object to have steam at all. Many of the mercantile interests do not wish for it, and many of the settlers do not wish for it. Many of the settlers who have large tracts of land on very easy terms consider that every new settler that comes is a competitor for that which they would be glad to keep to themselves.

2124. Then the opinions of the mercantile community and of the settlers are regulated more with reference to their private interests than to those that relate to the public solely?—They are regulated more with reference to their private interests, but different men, according to their character and education, take different views. A gentleman who, I believe, now takes the lead in political matters in New South Wales, I understand is not favourable to steam at all.

2125. Then you are of opinion that the Committee had better form their own opinions with reference to that which is likely to conduce to the public good, rather than to bewilder itself by reference to the views of individuals whose opinions would be regulated by their private interests?—Entirely so; inasmuch as individuals merely speak for their private interests, I would impress upon the Committee that they should put those opinions out of the question, and look at the thing in a broad imperial view.

2126. Then we are wasting our time in trying to collect what is called public opinion in Australia?—It is not for me to say that the Committee is wasting its time; I give them my impression upon the subject.

2127. Mr. *Wilson.*] Supposing that a communication by steam with the Australian colonies existed at the present moment in each of the three ways, and persons could choose between the three, by which route would the greatest number of letters depart from and arrive at the colonies, according to the present state of the communications with the colonies?—I presume that whatever steam route was established, unless possibly the Cape of Good Hope, all the letters would go by the steam communication which was established by that course; I should think that more letters would go by India, because there would be the Indian and Chinese communication in addition to the Australian. There is a considerable trade between Australia and China; they import a great deal of tea.

2128. Mr. *H. Berkeley.*] Are you not aware that the Australian community have said, particularly the people of Sydney, that they attach more importance to steam communication

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munication with India and China, than to postal communication with England?—I do not think that is the general opinion. Here again I must discriminate between different interests; persons like myself who own house property in the town of Sidney are very anxious for steam communication with India, because they think it will raise rents, and that residents would come from India there; but I think the community at Sydney are more anxious for communication with England a great deal than with India and China; I am certain that nothing will be more distasteful to them than a communication by Singapore *viâ* Cape Leeuwin.

2129. When you state that the fare *viâ* Singapore would be 180 *l.*, are you not calculating upon the rate now charged for first-class passengers to Singapore?—That was the rate that was represented to me in December 1849 at Sydney; of course my information may be subject to numerous inaccuracies; it was the best information I could get at the time.

2130. Do you not consider that that rate would be very much modified if future arrangements should take place, and competition should spring up?—I could not pretend to answer that question; it certainly would seem to me that there is room for no little modification.

2131. Mr. *Mangles.*] Are you not aware that the competition for passage by parties going to and from India and China is so great, that it would necessarily raise the rate upon Australian passages?—I am not competent to speak upon that subject.

2132. Lord *Naas.*] You said that horses and copper formed a considerable portion of the exports from the Australian colonies at present, and that copper is the principal export from South Australia; would those exports, or the returns consequent upon that trade, be at all facilitated by the Panama line?—Not in any respect whatever.

2133. You said that the colonists are very poor, and that the amount of fare is a great object to them: do not you think that they would rather pay 80 *l.* for a first-class passage and 35 *l.* for a second-class passage, and be a little longer upon their voyage, than pay 105 *l.* for a first-class passage and 50 *l.* for a second?—I am inclined to think not; I think they would prefer steam, in order to avoid the risk of a long passage; it is not a very uncommon thing to find a ship that has been out 150 days, and therefore that is a thing that many consider.

2134. The question alluded to the difference of 10 or 12

or

or 15 days?—You cannot calculate with certainty upon such an immense voyage as that; mankind will not calculate upon the average, but they would take a view not only of what the average passage is, but of what it may possibly be.

2135. Supposing that a screw steamer would return home by the Cape in 90 or 95 days, and the fares were what have been stated, and that the Panama steamers did it in 70 days at the fares proposed by that company, which line do you think the colonists would prefer?—Of course I must speak with reserve and qualification, because I do not pretend to be competent to judge of the power of the steamers to deal with the weather at the Cape, but at present I do not think you would get a single colonist to venture upon that voyage.

2136. But supposing it was tried and found to be possible?—The colonists are not so ignorant that they would deny its possibility, but they would think it was likely to be attended with a great deal of rough weather, and possibly delay, and they would rather take the route by Cape Horn.

2137. With regard to Cape Horn do you think that a delicate person would prefer the stormy passage round Cape Horn, even though it were shorter than the passage by Cape Leeuwin, by which they would be almost certain of fair weather during the greater part of the voyage?—The evil they would expect would be between the colonies and Cape Leeuwin. Of course when you get beyond that you get into any latitude you please. It is a bugbear to the colonies at present; they are of opinion that there would be great difficulties in that part of the passage. They would not say that it is impossible, but they are of opinion that they would meet with very bad weather.

2138. You said that the colonists know very little about the passage home by Cape Leeuwin?—It has not been much tried, and that may be the reason why they have such an unfavourable impression of it. Of course Cape Horn is a very disagreeable voyage, and the colonists are frightened at that rough passage, but they have been in the habit of taking it in preference to the passage by the Cape of Good Hope, which is generally considered by mariners to be worse.

2139. The proposition of the Screw-steamer Company by the Panama route is to establish branch steamers to run from Sydney to Port Phillip; that plan would afford no communication westward of Port Phillip?—Not in the return of post; that is a great evil, I admit.

2140. Therefore with regard to all the colonies west of

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Port Phillip, the letters must remain unanswered till the next steamer?—Yes; that is a serious drawback, but I do not think it is a necessary ingredient in the scheme.

2141. Do not you think that facility of intercolonial communication is a great matter to be considered in the settlement of the line?—I do not think that intercolonial communication is of such great importance as the communication of each of the colonies with England.

2142. If a line could be found that would embrace the advantages of intercolonial communication as well as of a direct communication with England, that would of course be a great point in its favour?—Certainly.

2143. Would not a communication coming from the American side afford less facilities for intercolonial communication and direct communication between all the colonies and home, than a communication coming from the African or the Indian side by the western coast?—I think the thing is pretty nearly balanced; but upon the whole, I think if any preference is to be given, if you cannot do evenhanded justice, the much larger population of New South Wales entitles it to preference over South Australia.

2144. The question is, whether a communication coming from the American side would not give less facilities for intercolonial communication, than one coming from Africa or from India by the western coast?—In this respect it would, that if it stopped at Sydney of course there would be no intercolonial communication at all but the main line; in the other way it might call at Port Phillip and go on.

2145. Would not a steamer going by the Cape or from India by the west coast of Australia, actually pass by each of the Australian colonies in succession during her course?—She would pass by Adelaide, but at a considerable distance, unless she deviated, and all the other colonies were sacrificed to the convenience of Adelaide. The natural course would be to go to Port Philip, passing by Adelaide.

2146. Would it not be possible for the steamer to touch at each of those places in her way, and to give the colonists the advantage of intercolonial communication, and of communication with home at the same time?—It would be perfectly possible.

2147. Mr. *Mangles.*] You said that you did not think that the exclusive preference of Sydney, and the abandonment of the western colonies, was an inseparable ingredient in the Panama scheme?—No.

2148. Could not the communication be effected by making Port

Port Phillip the point of arrival?—Yes; I am of opinion that that would be the proper thing, or else to divide at New Zealand.

2149. Would it not be as easy to send branch steamers off from Port Phillip, right and left, to Sydney and to Adelaide, as for the main steamer to touch at the different ports?—I presume it would be easier and better, because the branch steamers would be smaller, and not consume so much coal; and I see no advantage in carrying the large steamer further than is necessary in order to effect the inter-colonial communication.

2150. Are you not aware that the Hunter's River Company has a plan in contemplation for providing branch steamers to meet the Panama line?—I have heard something of the kind; I could not pretend to say that it is the fact.

2151. Would there be any difficulty in providing branch steamers from Port Phillip?—None at all; there is now steam communication between Launceston and Melbourne, and there was a branch communication between Sydney and Adelaide, but it was rather a large steamer, and did not answer.

2152. The noble Lord, in a question that was addressed to you, put 70 days as the time between England and Sydney by the Panama route; is that the time that the company have mentioned?—I am under the impression that it would be less than that; I believe that if there is any part of the world in which you can count upon a long voyage being performed with certainty, by a screw steamer, it is in the Pacific Ocean.

2153. Does not the Panama Company profess to do it in 64 days one way, and 62 the other?—Yes, something of the kind; I believe it to be quite possible to do it in that time; but I would again impress upon the Committee that New Zealand ought not to be left out of consideration, if it was only on account of the large aboriginal race. Things are tending to the withdrawal of the troops, and I trust that the natives and settlers will live in harmony; but if not, they are a very formidable race of people, and it is of great importance that the Government should be well and speedily apprised from time to time of what is going on in the colony, or else some great catastrophe may happen from the want of information.

Captain *Robert Fitzroy*, R.N., called in; and further Examined.

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2154. *Chairman.*] WHAT connexion do you hold with the General Screw Steam Packet Company?—One of the managing directors.

2155. You are aware of the tender which has been put in by the company, offering to effect a communication with Australia?—Yes.

2156. How long has that company been established?—It has been established in its present form since the 12th of March in this year; it was in existence under the same designation, but with a more limited board of directors, and with more limited objects, for three years previously, and before that for two years. It has been in existence since 1845.

2157. Have you brought with you the papers which were ordered by the Committee?—I have (*producing the same*).

2158. Will you state to the Committee in what manner it is proposed to arrange the communication by the Cape of Good Hope with Sydney?—The distance between England and New South Wales is about 13,000 miles. An average rate of eight miles an hour will give 13,056 miles in 68 days without stoppages, and an average of nine miles an hour will give 12,960 miles, also without stoppages, in 60 days; showing that 13,000 miles might be made at the rate of eight knots an hour in 68 days, exclusive of stoppages, and at the rate of nine miles, in 60 days, without stoppages. Supposing the passage made either way in two months and a week, six steamers, and one spare ship, may perform the voyages in the following manner: A steamer will start from England on the 1st of January, another on the 1st of February, and another on the 1st of March, the 1st of April, the 1st of May, and the 1st of June; those will be the six ships. The first ship will arrive in Sydney in the first week of March, having been two months and a week on her passage; she will remain there discharging cargo and loading again during a month, till the following ship arrives, the steamer which would have sailed on the 1st day of February. This second steamer would arrive during the first week of April. Two days after the arrival of the second steamer, the first vessel, which had been previously prepared, loaded, and with her passengers ready, would start, so as to return to England in the middle of June; making the course of post 136 days. If the first steamer has a speedier passage than

than usual, having met with no particular delay, she would arrive early in June, and be ready to depart again the 1st of July; but it will be more prudent to rely on the spare ship, which would be quite ready to start on the 1st of the following month. The same routine would be continued. If the ship coming from Sydney made a quicker passage than usual, and had three or four weeks to spare in England before being required to start again, she would go on the next voyage; but if she were a week or two behind her time, so as not to give more than a week or 10 days, or a fortnight, in England, she would remain for the next trip but one, and the spare ship which had been kept ready would start immediately; so that there would be no delay in having a ship loaded and ready to start on the 1st of every month. Six ships would be constantly at work, making two voyages each in a year, while a seventh ship would be ready with a few officers (being perfectly fit for sea in all respects except manned) to take the place of either of the six ships which might be behindhand. A week's delay, or even a delay of two or three weeks, in any one ship, will not throw out or inconvenience the arrangements of the other ships; and in so long a passage it will be better to count by weeks rather than by days, except only the exact day of departure from England. This would be nearly the plan followed by the company.

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2159. Have not the company entered into an arrangement with the Government with reference to a communication between the Cape of Good Hope and this country?—They have.

2160. How many voyages have they made?—Four vessels have sailed from England on four following months; two have returned, and one is due this day.

2161. What was the time in which you calculated that they would be able to effect their passages?—It was intended and proposed by the company that they should effect the passage in about 36 days out, and the same home, but the Government required a deviation to be made to St. Vincent, as well as to Sierra Leone, which has made it impracticable to make the voyage in as short a time as was originally intended. To carry out the objects of the Government under the present arrangement, about 83 days will be required from England to the Cape and home again, allowing for the delay at each place and a week at the Cape. The voyage to the Cape outwards will be about 38 days, the voyage homeward nearly the same.

2162. The

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2162. The voyages which have already been made have not been done within the time that was originally proposed? —Not within the time originally proposed, because the distance to be run over is greater than that which was contemplated. The Company proposed to go to Sierra Leone and the Cape; Government required a course to be made to St. Vincent, from St. Vincent to Sierra Leone, and thence to the Cape. In addition to that, the distances, as calculated at the Admiralty, were some hundred miles less than the distance that the steamer has to run over. Between Sierra Leone and the Cape only, and back again, there is a difference between the measurements of about 500 miles, owing to some oversight.

2163. Have those vessels on those several runs kept the pace which you originally expected they would be able to do with the screw, the calculation being 8½ knots?—Eight knots. On those two voyages they did average eight knots within a fraction; that speed was intended to be kept up by ships of 900 tons; these are ships of 540 tons.

2164. What horse power?—One hundred-horse power; they are usually called 80-horse power, but according to modern measurement they should be 100-horse nominal power.

2165. What is the size of the vessels by which you propose to effect a communication with New South Wales?—One thousand four hundred ton ships are the smallest; perhaps with larger, but not with less than 1,400 tons.

2166. With what horse power? — Two hundred and fifty-horse power for 1,400 ton ships, and 300-horse power for 1,800 ton ships, if they should be used.

2167. What proportion of space will the engines and coals on board those ships take up with reference to the tonnage? —In an 1,800 ship, 714 tons will be occupied by the engine room and coal magazines (or coal bunkers). The capacity for cargo will be 1,100 tons.

2168. What will it be in the 1,400 ton ships proposed in the tender?—In the 1,400 ton ships the cargo space will be 750 tons; the engine-room and coal-bunkers will take 550 tons.

2169. The 1,400 ton ships are the vessels you propose to send in the tender?—I believe it is not decided. An 1,800 ton ship may be ready first, and it may be advisable to send her first; but the 1,400 ton ships will answer best for permanent employment on that service.

2170. What number of first-class passengers would those ships

ships be fitted to carry?—The accommodation in a 1,400 ton ship would be 20 first-class passengers, 30 second-class, and 70 steerage. Captain *R. Fitzroy*, R. N.

2171. Which are the intermediates?—The second-class. That would be the outward voyage. 8 May 1851.

2172. Leaving what tonnage for goods?—In the 1,400 ton ship it would leave 750 tons for goods, after providing accommodation for the passengers and their provisions and water. In the homeward passage would be 30 first-class passengers, and 10 second-class passengers, or intermediates, no steerage passengers being estimated on the homeward passage. The number of passengers has been estimated at the lowest number that is thought certain. We have endeavoured to under-estimate everything rather than the contrary.

2173. Mr. *Mangles.*] You spoke of 100 on a former occasion; now you make it 120?—I spoke then of the number that might be carried, not of the number for which the estimates have been calculated; taking a few more or less steerage passengers would not be of moment. In this estimate there are 120, because there are 70 steerage passengers; the number may be rather larger—there might be a few more at one time or a few less. The number of first-class and intermediate would be probably the same, and whether there were 50 or 70, or even more steerage passengers, would not make much difference.

2174. *Chairman.*] Have you made any calculation as to the cost at which passengers can be conveyed by that line?—At the same prices as by the best class of sailing ships; the expenses of first-class passengers are estimated at 70 *l.*, the intermediate at 30 *l.* and the steerage at 12 *l.* It is rather lower than has been usual in some of the sailing ships, but the rates of passages to Australia are now less than they were a few years ago.

2175. What kind of goods do you expect for freight?—Wool, tallow, and oil are the principal exports from those colonies; wool is the most valuable and most constant. The outward cargoes would be general; they would consist of almost all descriptions of merchandise, and there would be no difficulty in filling the ships on their outward voyage. The homeward voyage freight would vary a little on account of the time of year, because wool is not sent home in large quantities at all times of the year; the rate of freight which is paid for wool is from a penny to three halfpence a pound, which can be paid very well for a speedy passage.

2176. Is

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2176. Is that the present freight in sailing vessels?—In sailing vessels, at present, it is from three farthings to five farthings a pound; but on account of the quick conveyance by steam ships, it is said by those best acquainted with the Australian colonies that it would command from five farthings to three halfpence a pound by these fast steamers.

2177. Lord *Naas*.] Would there be any difference in the rate of passage money outward and homeward?—The passage money would be rather higher homeward; the passage money homeward would be, for first-class passengers 80 *l*., and for intermediate 35 *l*.

2178. *Chairman*.] What would be the freight on other goods besides wool?—The calculation is made upon the lowest rate at which ships take cargo on the home voyage from Sydney, namely, 3 *l*. 10 *s*. a ton; usually ships go from Sydney to seek cargoes elsewhere if they cannot get a higher rate of freight than 3 *l*. 10 *s*. a ton; therefore in these calculations that has been taken as an amount that may be depended upon, but in the outward voyage the calculation has been made at the rate of 40 *s*. per ton only; that has also been taken as the very lowest rate.

2179. That is the lowest rate of freight?—Yes.

2180. What do you consider the average freight?—With respect to the freights sent in these ships probably 3 *l*. a ton would be the average outwards; because they would command rather a higher freight than ordinary sailing vessels.

2181. Mr. *Plowden*.] What would be the insurance?—On goods one per cent., but on the ships five guineas per cent. upon the value of the ship.

2182. Mr. *Divett*.] You do not expect 3 *l*. 10 *s*. a ton for your dead weight, do you?—Not for dead weight; but there would be very little dead weight required; they would be almost entirely filled up with wool; the greater part of the cargo would be wool, because these steamers having coals and machinery in the bottom, will only require a light cargo.

2183. Mr. *Willcox*.] You do not propose to have any fixed rate of freights, but to take advantage of the markets?—Decidedly so.

2184. *Chairman*.] To be guided by the market?—Decidedly; these rates are merely estimated according to the present state of the market.

2185. Mr. *Willcox*.] You have stated that the mails from the Cape of Good Hope are due to-day; are you aware that the General Post-office has announced them as due more

than

than a week ago?—There has been some misunderstanding on the subject. The difference between the distances which actually have to be run over and the distances made public by the Admiralty has occasioned the confusion.

2186. Have you taken any steps to get that rectified?—Yes; it is now under consideration.

2187. Are you aware that the same thing occurred with respect to the last mail from the Cape?—Yes.

2188. And that it has been going on ever since?—Yes.

2189. *Chairman.*] Do you expect to carry many emigrants by these steamers?—Not many; the ships will not give accommodation to more than 70, and it will not be desirable to carry a large number, because the character of an emigrant ship is not one which passengers generally like. A first-class passenger would not choose to go in a ship with a very large number of emigrants.

2190. Do you know what the cost now paid for an emigrant's passage is to Australia?—The lowest price at which they have been taken out is 10 *l.* per head in sailing ships. The Land and Emigration Commissioners have contracted for a certain number of emigrants, on more than two or three occasions, for not more than 10 *l.* per head.

2191. Any of the lower class of emigrants that would be carried by your vessels would be carried as steerage passengers?—Yes.

2192. Mr. *Berkeley.*] Is not your estimate of 750 tons of light goods rather a high estimate, considering the competition of sailing vessels. Is that a well-considered estimate?—It may seem large at first, but when it is recollected that four or five vessels load for those colonies from London alone every month, and that as many leave Sydney on the average every month, (though many more may leave in some months, and fewer in others), it does not seem too much to expect that one steamer a month, making the voyage in half the time that either of the sailing vessels will, will have a preference in the market; that she will insure her cargo being completed, and that there will still be left sufficient for the usual sailing vessels, because the rapidity of communication consequent upon the establishment of steamers will of course increase commerce, and augment trade generally there, as it has done in all other parts of the world, and that the result will be beneficial to the sailing ships, because the steamers can only take a limited quantity.

2193. Is there any provision made for a spare steam ship at Sydney?—There is no provision for a spare ship at Sydney;

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Sydney; it is proposed to have only one spare ship: the ship that goes there will be a month in port; and there are steam factories at Sydney where any ordinary repairs can be effected, and they are constructing a dock where she could be examined in case of anything going wrong; but at present it is not contemplated to have a spare ship: the fact is, that the trade between this country and the Australian colonies is very safe, and there are very few dangers on that line. Among the large number of ships continually going to those colonies and returning—going all round the world, outwards by the Cape of Good Hope and homewards by Cape Horn, you very rarely hear of accidents; the accidents in proportion to the number of ships are probably much less than in any equal number of ships employed in any other line.

2194. *Chairman.*] You have heard the evidence which we have received from Sir Edward Belcher as to the violence of the winds in the neighbourhood of the Mauritius and on the line which your ships would be compelled to take on their homeward passage; do you concur with him in that view?—No, I differ entirely from the evidence given by Sir Edward Belcher as to the wind and weather between Australia and the Mauritius. The evidence which I gave previously upon the subject, and to which I adhere from personal experience, as well as from the information which I have collected from others, is that between Australia and Africa, from the parallel of 28° south to near the equator, except at the changing of the monsoons, which is twice in the year, the prevailing winds are moderate trade winds with very fine weather. It is only about the period of the shifting of the monsoons, when hurricanes occasionally happen, that the weather is bad in that ocean.

2195. What would be the difference in the length of the steamer's passage outwards to Sydney, between taking the line which you propose to take and taking the advantage of the great circle?—A good deal has been said of great circle sailing; in theory it is very well. You certainly by endeavouring to follow a great circle, may make a shorter distance; but it cannot be carried out in practice to any extent. If you were to sail strictly upon that principle in going from England to Sydney, you must go into very high southern latitudes, where you would meet with very cold weather, with ice, and with easterly winds. To avoid such weather it is much better not to go further south than 41° or at most 42°. Between 38° and 42° westerly winds prevail during the

the greater part of the year (interrupted occasionally by easterly winds), and there is no risk of falling in with ice or meeting such high seas, and such cold weather, as you would get into by going very far southwards.

2196. What would be the homeward passage?—The homeward passage should be made by keeping close to Australia, which in a screw ship might be done with much greater confidence than in a mere sailing ship. There would be no fear of getting embayed; you would find moderate weather, and during many months of the year easterly winds in the great Bight of Australia; you should pass round Cape Leeuwin, the nearer to it the better, (because there is not so much wind, or so much sea as there is in the offing); you should then steer to the north-west to get into the the south-east trade as speedily as possible, and directly you get into the south-east trade you should run across to the westward towards the Coast of Africa, passing a little south of Madagascar.

2197. What parallel of latitude would you have to make before you took the trade?—In the summer time 28° south; in winter perhaps 20° south. It was mentioned by Sir James Stirling, in his evidence, that he had observed, after 10 years' residence in the neighbourhood, that the south-east trade between Australia and Africa comes to 30° south or thereabouts, in the summer time, and in the winter further south than it does between Africa and America; it may be depended upon in about 25° south, taking the year round.

2198. Will you state what you consider would be the difference in the time that it would take on the outward passage between touching at the Cape and then going from the Cape to Sidney, and following the line which you propose to take, not touching at the Cape?—The difference in time would be six days; about six days would be saved by not touching at the Cape in the outward passage.

2199. And in the homeward, how much?—In the homeward it would be advisable to touch at the Cape, because in going home you must pass so close to the Cape, having gone near Madagascar and then along the coast of Africa, that it would be advisable to stop and fill up your coal.

2200. On the outward passage, where would the vessel coal?—At St. Vincent's in the first instance; and then, if properly managed, a screw steamer might run to Port Phillip direct—without coaling anywhere. By acting as a sailing ship while having favourable winds, and using her steam only

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only in calms and light variable winds, she need not coal between those two places.

2201. But we have it in evidence that there are certain periods of the year when you have easterly gales?—Yes.

2202. In such an event, supposing the vessel to be compelled to burn her coal, where would she put in for coal?—Into the Cape of Good Hope, if she met with easterly gales previously to that point; that would be very rare; but afterwards she might put into King George's Sound. If further to the westward, she would put into Adelaide; but these would be very rare cases.

2203. Is there any point between the longitude of the Cape of Good Hope and the longitude of Cape Leeuwin in Australia, where she could put in for coals?—Yes; at St. Paul's (or Amsterdam) there might be a depôt of coals if necessary; but it would probably be better to rely upon King George's Sound or the Mauritius, in case of any unusual weather. There would be a choice between the Mauritius and St. Paul's (or Amsterdam) and King George's Sound.

2204. On the outward passage have you calculated what difference in time it would take for a vessel to touch at the Cape, and then to go to the Mauritius, and from the Mauritius to Sydney?—It would delay her three or four weeks. To go to the Mauritius would take her out of the westerly winds; she would have to make her passage in direct opposition to a strong current that sets from near Madagascar to the Cape, and in direct opposition to the south-east trade all the way from the Mauritius to Australia; whereas, if she went from the Cape to Australia, she would have a fair wind all the way, generally speaking.

2205. Mr. *Willcox.*] Your plan involves the necessity of having two mail contracts, one to the Cape and the other to Australia, *viâ* the Cape?—That appears to be necessary, because if you bind the Sydney ships to go to the Cape, you make them take about a week longer in the outward voyage. The Cape service might be well performed in connexion with the Mauritius and Ceylon.

2206. *Chairman.*] Has not a proposition been made by the Company to open a communication between the Cape and the Mauritius?—Yes.

2207. Is it in contemplation to extend the line from the Mauritius to Ceylon?—It is.

2208. And from Ceylon to Calcutta?—Yes, including Madras.

2209. Have

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2209. Have any proposals been sent to the Government to that effect?—There have been.

2210. What length of time do you imagine that one of your vessels would take from the Cape to the Mauritius?—From the Cape to the Mauritius would be ten days with a screw steamer.

2211. From the Mauritius to Ceylon?—Twelve days.

2212. With the exception of three or four days' loss of time, what other disadvantages are there in the line touching at the Cape, and proceeding on from Sydney. Is there any other disadvantage besides the loss of time?—Not at all; on the contrary, except the loss of time, it would be advantageous, because it would insure having plenty of coal; it would give an opportunity for communicating with the Cape for fresh provisions, and it would give another post to the Cape.

2213. Was not that one of the arguments that were put forward in favour of the Cape line, that it would bring the Cape of Good Hope and the colonies at the Cape into communication with Australia?—That was intended to be by the return voyage, that ships in returning would call at the Cape. The fact is, there is very little communication between the Cape of Good Hope and the Australian colonies, not enough to make it a matter of moment that the ships should call there on that account; but the loss of time to the whole body of the Australasian colonies by the steamer being a week longer on her passage out, would be very important.

2214. Sir *James Hogg.*] According to the route you yourself suggest, you would be subject to a contingency that would probably occur very often, of being obliged to put into the Cape for a supply of coal?—I think not often, not more than perhaps twice in the year; because westerly winds prevail during nine or ten months in the year in the latitudes from 38° to 42° or 43° south. The interruptions from easterly winds, taking them throughout the year, do not amount to more than two months, they are generally of short duration; the great preponderance is in favour of westerly winds.

2215. How many days' coal do you think these ships would carry?—It is intended that they should carry coal for 20 days' continued steam, as an auxiliary, by burning the coal economically: 536 tons in a 1,400 ton ship.

2216. *Chairman.*] Your offer to the Government is to perform this service at the rate of 4*s.* a mile?—Yes.

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2217. Of course in that offer you have taken into consideration the pace at which you tender to perform the service?—Yes.

2218. Do you believe that the service could be performed with screw steamers in a shorter space of time at greater expense?—There is no doubt that the service could be performed with the screw using full power in a much shorter time, because if you give up the idea of carrying so much cargo, and carry more coal and more machinery, so as to have a full power steamer instead of a steamer with an auxiliary screw, you may then go as fast as any of the steamers that now carry on the mail communications. The expense would, of course, be greater. If the public will pay rather more as the mileage rate, a higher power can be put into the steamers and cargo diminished, when the mails will be carried in much less time. They can be carried at the rate of 10 knots an hour, or during a great part of the passage 11 knots, instead of 8 or 9. As the sea on that route is open and perfectly clear throughout, steamers may be employed there at a greater rate of speed throughout the voyage than upon any other route, because they can run all night and day at their highest speed.

2219. You look upon it that the pace is a mere question of price?—Chiefly a question of price.

2220. Mr. *Divett.*] What difference do you expect there will be in favour of the large steamers now building, over those used on your present route to the Cape of Good Hope?—The speed of the large steamers, with an auxiliary screw, will be about 9 knots. The present steamers go from 8 to 9. The average speed of those small vessels is 8 knots.

2221. You feel confident of getting that speed of nine knots out of those larger ships?—Quite confident; because similarly increased dimensions and similar increase of power in all other cases give a proportionate increase of speed. The average will not be less than nine knots.

2222. You spoke of the hurricanes at certain periods at the change of the monsoons; are those seas liable to those hurricanes for any considerable time during the change of the monsoons?—Within a month, before or after, they are expected; it is called the hurricane season. Some years pass over without any remarkable hurricane; once in eight or ten years a very violent hurricane is experienced.

2223. Between what parallels of latitude do you look for those hurricanes?—From a few degrees south of the Mauritius; or from the southern tropic as far as the parallel of about

about 8° south latitude. Those hurricanes extend as far as Java; they are felt all the way across from Madagascar to Java and Torres' Straits.

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2224. Over how many degrees of latitude?—From 15 to 20 degrees of latitude; between the meridians of 45° and 155° east. In fact, between the Tropics throughout the Eastern Oceans heavy gales prevail, more or less, at the period of the shifting of the monsoons. Similar weather is felt even across the Pacific, at the Friendly Islands, and also at the Society Islands.

2225. The Committee have had evidence before them to the effect that the Pacific is very little troubled with those gales?—Very little compared with the Indian Ocean, or with the Atlantic; but still it is not free from them occasionally; there are strong gales from the westward, even in the zone of the south-east trades in the Pacific. In the chart I have before me, in latitude 15° south, just to the north of the dangerous archipelago in which the Gambier Islands are situated, it is noted, "Violent storm from the west, 20th of March 1824;" and it is well known that in the Friendly Islands and the Society Islands, and from there all the way between the trades westward, storms are felt occasionally.

2226. Mr. *Currie.*] You heard the evidence of the last witness?—I heard it.

2227. He describes that, in going out from the Cape to Australia, he went about latitude 41°; could he have chosen a more favourable route than that?—Not for that voyage; it is a most favourable parallel.

2228. Mr. *Divett.*] Do you consider that in going the out-voyage you are often likely to encounter such weather as you will encounter off Cape Horn?—Not nearly to be compared with it. I was employed a long while about Cape Horn, and I have had an opportunity of comparing the weather, and I should say that the weather off Cape Horn is much worse than the weather off the Cape of Good Hope or Cape Leeuwin, taking the year through:—it is very much colder, and very much more unpleasant from being much colder.

2229. Mr. *Mangles.*] Do not vessels going home choose that route in preference to the other?—Because the westerly winds are so prevalent that it is the easiest course to take; they get into a high southern latitude, and then they run before the westerly winds all the way round.

2230. Mr. *Plowden.*] Are they exposed in those high southern latitudes to icebergs?—If they go far south they

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are; icebergs come northward of Cape Horn. In going towards Cape Horn from New Zealand I fell in with many large icebergs in 49° and 50° south, Cape Horn being 55° south.

2231. Mr. *Mangles.*] In your former evidence you said that you had changed your mind about the Panama route being the most desirable. Will you state your reasons for changing your opinion?—Because there is such a great space of ocean to be traversed between Sydney or New Zealand and the returning point, the Isthmus of Panama, (the steamer not being one of full power, because she could not carry coals sufficient for the distance, but of auxiliary screw power) that her arrival would be uncertain for some days at the isthmus. If she arrived a few days too late, the West India mail steamer would have started; then there would be a fortnight's delay, or thereabouts, in addition to her own delay, making an addition of about three weeks to the passage from the Australian colonies to England; besides the inconvenience, and at some seasons positive danger, in remaining so long at Panama. There would be great uncertainty in making the return passage, however easily it might be made. It is a very easy passage, because the winds are, generally speaking, in favour, but they vary in strength, and they also vary in direction, so that you could not calculate upon the time of arrival at Panama within a week, and that seems to me fatal to the connexion with the West India line.

2232. You heard Captain Belcher's evidence about the facilities for coaling at Gambier's Island?—Yes, but I differ from him entirely; I have been in those seas, and across them both ways; Gambier's Islands are surrounded by what is called the Low Islands, or the dangerous archipelago. There are a great number of coral isands in that neighbourhood, which have not yet been surveyed, and they do not appear in our charts at all; the risk to any ship in running for that neighbourhood would be exceedingly great, for the majority of those coral islands are very low, so that you can hardly see them till you are close to them, and at night they would be very dangerous.

2233. You spoke of the navigation across the Pacific as being very easy, and yet as being uncertain; are not those two terms rather contradictory; is not a passage that is very easy, upon the average, very certain?—I beg leave to draw a distinction; the route that I call easy would be in running to the eastward in about 40° south to about 120° west, and then

then going gradually to the northward, making a curve between New Zealand and Panama; avoiding the Low Islands, and all that neighbourhood entirely.

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2234. Mr. *Bright.*] Making a curve in the opposite direction from that which is marked upon the map?—Just the opposite; the line would go nearly east at first for some distance, and then up to the north-east along the coast of America, to profit by the south-east trade:—If you were to go in the line that Sir Edward Belcher marked out by the Gambier Islands you would meet the south-east trade. The wind is nearly east there during the greater part of the season; you would oppose that trade; you would have to go through a cluster of dangerous low islands, which do not appear upon the chart; and then you would have, from the Gambier Islands to Panama, to encounter the trade wind directly against you, or very nearly so, and a very strong current against you all the way between the Galapagos Islands and the Low Islands. The current sets to the westward during the whole of the distance; to avoid that current, and to avoid the south-east trade, which taken in that direction would be a foul wind, I should prefer going to the eastward with a westerly wind till I got far enough to the eastward to run up with the south-east wind. That I should call an easy navigation; but it would be an uncertain one, because it would depend upon the wind being more or less strong during the passage.

2235. Mr. *Mangles.*] You heard Sir Edward Belcher's evidence as to currents, to the effect that the currents do not always set in the same way, and that sometimes there are no currents at all?—I am alluding to the space between the Galapagos Islands and the Society Islands. From the evidence of all the navigators who have crossed that sea, and from my own experience of it, my belief is that the currents are very strong, and that they prevail in the same direction throughout the year. They are permanent currents, not of the nature of tides, but currents like the Gulf Stream. A current comes down the north-west coast of America, and another current goes up the west coast of South America; the two streams unite near the Galapagos Islands, and then go westward across the ocean all the year round, like a Gulf Stream, running westward.

2236. Your experience of those seas was prior to the date of this letter of yours of the 12th of September last, in which you gave a strong opinion in favour of the Panama route?—The opinion which I gave was strongly in favour

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of the economy and ease of a communication by a sailing ship, or by a screw steamer, between Panama and Sydney, returning from Sydney by New Zealand to Panama. My opinion in that respect is still exactly the same, that it is an easy and economical passage, but it is not a passage that can be made certain in point of time. With reference to postal communication and the conveyance of passengers, who would have to go across the isthmus to meet another line, I think it is not the best course, because of the uncertainty of returning to the point of departure.

2237. How do you reconcile that uncertainty with the expression that between Panama and Sydney the ocean is unequalled for the facility afforded to navigation?—In a smooth sea with a fair wind you make a very easy voyage, but if the winds are variable, and you go sometimes in three weeks and sometimes in five, the voyage is uncertain.

2238. Supposing it was said that there was great facility in going from London to Marseilles for example, should you not understand that to include certainty; is it possible to have facility without certainty?—What a sailor calls an easy passage, and what he calls a certain passage, are different things; the Pacific is one of the easiest seas in the world to navigate, but it is also one of the most uncertain; I will mention another sea, the Mediterranean; there is no sea easier to navigate than the Mediterranean, but there is no sea more uncertain, from the frequency of light winds.

2239. You have spoken of danger from the islands as one objection, yet you say in this letter that the precise situation of every island near the proposed route is known?—Exactly so; the route that was marked out upon which the computation was made the other day, does not pass any island which is not precisely laid down; that letter refers to the route which ought to be taken according to my view, and that route passes by no island of which the position is not exactly known; but if you took the route that Sir Edward Belcher recommended this morning, you would have to pass through the group of the Low Islands, a very dangerous group. Here is the latest chart (*producing the same*) in which the Gambier Islands appear, and these islands do not appear on the Committee's chart at all; they are part of the cluster called the Pamuto or Low Islands.

2240. You stated on the 10th of September last, that it had been your duty as well as inclination to study these peculiarities; have you had any additional opportunities of studying these peculiarities since that time?—Not at all; my

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my opinion on the matter is still precisely the same, for a sailing ship or for a screw steamer taking the route that has been proposed for many years, namely, going from Panama to Tahiti and from Tahiti to Sydney, and then back from Sydney to New Zealand, from New Zealand by a southern course, and then along the coast of South America, northwards; that route is unequalled in any part of the world for ease and comfort, but for certainty I can say nothing. Its uncertainty in returning from Sydney or New Zealand to Panama appears to me fatal to making that line the means of postal communication with the mother country, or for carrying any great number of passengers, because of the doubt at what time they will reach the isthmus.

2241. When you gave that line such unqualified praise and preference, as you do in this letter, did not the matter of uncertainty strike you then?—I spoke of it with reference to the matter of convenience for communication in the ordinary manner; not for a regular post at particular periods, but for ordinary intercourse between the two continents.

2242. In this letter you also disparage the line by the Cape, as being exposed to the highest seas and the heaviest gales of wind; have you changed your opinion upon that?—Not at all; I think it is better to encounter those high seas and those gales of wind, and make your passages with certainty as to time, than to risk being a fortnight or three weeks delayed at the isthmus, and encountering all the inconveniences of transhipment, and perhaps another transhipment afterwards, from one steamer to another. I think it is better to take the inconveniences of the sea and wind, rather than the uncertainty, and exposure to the climate, and a possible delay of some weeks.

2243. Do you agree with Sir Edward Belcher as to the higher average rate of speed attainable in the Pacific, on account of the tranquillity of the sea?—If he burns more coal.

2244. Do you agree in his opinion that, *cæteris paribus*, in every respect a higher average rate of speed is attainable in the Pacific than in the Indian Ocean?—Yes, if you can supply coal with which to keep it up. The difficulty would be to carry coal, because of the great distance between one port and another.

2245. Mr. *Berkeley*.] You stated that the steamers proposed of 1,400 tons and 250-horse power are auxiliary screw steamers. Do I rightly understand you to mean that you

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will get nine knots an hour out of those auxiliary screw steamers?—Undoubtedly. Those steamers will be of iron, with very fine lines, and they will go in smooth water nine knots and a half. Many sailing ships have made passages in which a higher average has been maintained than nine knots an hour. These steamers will have all the power of sailing ships; they will go 12 or 13 knots under favourable circumstances, under the least favourable circumstances they would be kept up to seven or eight knots, and the average throughout the voyage would be nine.

2246. Are you aware of the average rate of going which Mr. Cunard gets out of his steamers?—Probably not more than eight, because he has to contend against a very high sea and a very strong wind during almost the whole of his passage. The northern part of the Atlantic is a very boisterous sea.

2247. Do you consider that you can get with your auxiliary screws as much speed as Mr. Cunard with full power steamers?—Yes; for this reason, that the greater part of our passage will be with steady strong winds; the greater part of the time, at least two-thirds of it, will be sailing in steady trade winds, or running before strong westerly winds in the southern latitudes.

2248. You think that is sufficient to make up the extraordinary difference between the power of steam which you have, and the steam which Mr. Cunard uses; the steam which Mr. Cunard uses being 600-horse power, with 1,800-ton vessels, and you using 250-horse power with 1,400-ton vessels?—The average of fine sailing ships without any steam at all, such as the Indiamen belonging to Messrs. Green and Wigram and Smith, and the average of men-of-war that make long passages, is about eight knots. Those Indiamen in making their passages, without any assistance from steam, average more than eight knots an hour; therefore I think that the addition of the screw, which will take those ships through calms and light variable winds at the rate of not less than nine knots an hour, will enable them to keep up an average throughout the passage of nine knots an hour.

2249. Do you think that Cunard's vessels are built upon an erroneous principle?—Not at all; but Cunard's vessels never have the advantage of a trade wind, or such an extent of smooth water as a ship has in going to the Australian colonies, which passes through two trades, with comparatively smooth water and favourable winds. When she gets

gets into the latitude of 40° south, she usually runs to the Australian colonies with a fair wind nearly the whole way.

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2250. Then you consider that having smooth water and a fair wind, even with a so much smaller amount of power, would almost enable you to arrive at the same rate of speed as Mr. Cunard?—I have no doubt of it, because Cunard's rate of speed is an average which his ships maintain through all circumstances, summer and winter, with gales of wind, and against them, and with all varieties of weather in the Northern Atlantic. The average rate of Green's or Smith's or Wigram's Indiamen, under sail alone, is higher.

2251. Are you aware that 10½ knots is the average rate of Cunard's line?—I am not aware.

2252. What is the speed by the Peninsular boats?—It varies very much; some of the Peninsular boats, for part of their distance, go as much as 11 knots, but others not more than seven or eight; it depends upon the sea in which they are employed, as well as the character of the boats.

2253. Have not they full power?—Generally speaking, they have full power.

2254. What description of sea have they to pass through generally?—The greater part of their voyage is through very smooth water; the only part that is exposed is crossing the Bay of Biscay and the Indian Ocean.

2255. Are you aware of the average rate of the Bombay steamers?—Taking them with and against the monsoon, I believe their average is between seven and eight knots.

2256. The boats which you are about to build upon some new plan, you conceive will be very superior to those at present used either by the Bombay or by the Peninsular Company?—The ships that we propose to employ will not have to make their passages in the teeth of a contrary wind. A screw steamer goes upon a principle different from that of a paddle steamer; she uses her sails and her screw, and when she meets with a contrary wind she slants away in one direction or the other, whichever line may be most favourable, and gets out of the foul wind into a fair one as soon as she can; she is not obliged to go head to wind as a full-power paddle steamer is.

2257. What is the greatest speed you think you shall be able to get out of your auxiliary screw steamers in smooth water under favourable circumstances?—The greatest speed is nine knots in smooth water, but of course you may increase the power of the screw and put more power so as to give greater speed; a full-power screw has given 13 knots.

There

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There is little doubt, I believe, among those who have paid attention to the subject, that a steamer may be built to go as fast with a screw as with a paddle, but it is a disputed point at the present day which of the two will have the advantage.

Captain *Edward Chappell*, R. N., called in; and Examined.

Captain *E. Chappell*, R. N.

2258. Lord *Naas.*] HAS the course which was originally laid down between this country and Chagres been adhered to by the mails of the Royal Mail Company?—No; it has been repeatedly changed.

2259. What have been the reasons of that change?—In the first instance, the original projectors of the line had made a line which comprehended 690,000 miles in a year, more or less. It was soon found by the company that it was impossible, with the proposed ships, to perform that immense rate of mileage, and it was also found that if they could have performed it, it would have very shortly brought the company into the Bankruptcy Court. The consequence was, that an appeal was made by the company to the Government to look into the question again. The Government caused it to be looked into, and they granted relief to the company in a different mode from that in which they granted it to Mr. Cunard's company, because, in the one instance, they gave Mr. Cunard more money three times over, increasing the sum every time, and in the case of the Royal Mail Company, they continued the payment the same, and allowed a change of route, which went to reduce the mileage, I think, one-half, or thereabouts.

2260. Is that the only change of route which has been made?—There have been several since.

2261. Can you state the changes that have been effected since?—I can produce the plans.

2262. Can you give the Committee any idea how often the route has been changed?—I should say four or five times.

2263. Have those changes been in consequence of the difficulty of navigation in those seas?—I should say not, but more with relation to combining the greatest amount of convenience and certainty to the fifty ports which are included in the company's operations, and which are to be called at once every fortnight.

2264. Have your commanding officers given an opinion that

that the navigation of those seas is a difficult one?—I never heard them express that opinion. Captain *E. Chappell*, R. N. 8 May 1851.

2265. How many of your vessels have been lost since the establishment of the company?—I think five principal ones, and one small one; six altogether.

2266. Have they generally been wrecked on shore, or have they been lost at sea?—In every case on shore.

2267. Can you state generally what were the causes of those losses; were they ignorance on the part of the commanders, or other circumstances?—I think I may say in every instance the grossest ignorance and the grossest inattention.

2268. In your opinion then, with experienced commanders there will not be the same risk of loss to those vessels as there has been hitherto?—Assuredly not.

Captain *William Clement Doutty*, called in; and Examined.

2269. *Chairman.*] HAVE you been employed much in the trade with the Australian colonies?—I have made 18 voyages to Australia, 14 voyages as commander. Captain *W. C. Doutty.*

2270. What route have you taken?—By the Cape of Good Hope; I have been 18 voyages by the Cape of Good Hope.

2271. Out and home?—No, I have been several times round by India, and seven voyages round Cape Horn.

2272. Which route would you recommend with a view to arrive at the principal settlements in Australia in the least possible time?—By the Cape of Good Hope.

2273. What place do you recommend as the first point of stoppage on the route to Australia?—After passing Maderia and the Canaries, I would pass inside the Cape Verds, and cross the Equator at about 15°; then getting the south-east trade, I should expect to fetch 25° south in 20° west. Then most likely the wind would draw to the north-east, and I should shape my course so as to pass the meridian of the Cape of Good Hope in about 40°; then edge away to the southward, and run into 45°, according to the time of the year, and run down on that parallel to about 120° east, then edge away gradually to Cape Otway, and from thence to Port Phillip.

2274. You think Port Phillip should be the terminus of the route?—Yes.

2275. Being at Sydney, what route would you take homeward?—I would go through Bass's Straits round Cape Leeuwin.

2276. Do

Captain *W.C.Doutly.*

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2276. Do you consider that the route by Cape Leeuwin could be made at all seasons of the year?—I have been round Cape Leeuwin seven times, twice in the winter season; once with a deep-laden dull sailing vessel with stock from Swan River in June, and I have no doubt that smart, well-found sailing vessels would make the passage at all seasons of the year.

2277. Did you keep near shore; did you take advantage of the Bight?—After passing through Bass's Straits in approaching the Australian Bight, I generally found the wind draw more favourably either from the northward or the southward; the winds are never at one point very long, they generally commence about north-east, and get gradually round to north-north-west, and then if you have heavy rains the wind flies at once to the south-west.

2278. Have you known very severe gales off Cape Leeuwin?—I have known very strong gales occasionally, as there are in all parts of the world.

2279. But not more severe than in other parts of the world?—Certainly not; during the early settlement of Swan River all sorts of vessels used to go round from Hobart Town, Sydney and Launceston, with stock and supplies for Swan River; I have known cutters make that voyage.

2280. What advantages in your opinion has the route by the Cape over the other two lines proposed for communicating with Australia?—In the first place, under ordinary circumstances the mails would be landed several days earlier than by any other route, and by calling at Port Phillip first the letters for the other different settlements would be delivered nearly at the same moment of time; in the next place, the passenger takes charge of his cabin at Plymouth and keeps quiet possession of it till he arrives at the termination of his journey, which for ladies and children is a great object; besides, the expense of the passage would be as compared with one of the other routes less than one-third, and as compared with the other less than one-half; then again, it is the only route by which you could convey merchandise, for by the other routes the freight would amount to nearly the value of the goods.

2281. Have you ever commanded a vessel through Torres Straits?—Yes.

2282. What do you think of the navigation of those straits?—You can always do it, there is not the slightest doubt; but it is an uncertain navigation.

2283. Would

Captain *W. C. Doulty.*

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2283. Would you call it a safe navigation?—No, certainly not.

2284. Is it a navigation that you would recommend a steamer to take, carrying on postal communications, and averaging nine knots an hour?—Certainly not; from the southern tropic till you are through Torres Straits and are abreast of Timor, they are constantly finding out new reefs.

2285. Although it has been surveyed by many able surveyors, you do not think it is made sufficiently safe for steam communication?—Certainly not. The charts are of very little service to you; you must steer the vessel all the way from the mast-head. I have been with two officers at the mast-head of a ship running over the coral reefs; we could not see them; the gleam of the sun was in the way.

2286. Do you consider that the survey could be trusted to, or have there been changes in the reefs since the survey?—They are always growing up. Ever since I recollect the colony the opinion has been that, with the exception of openings forced by the current, Torres Straits would be blocked up altogether.

2287. What is your opinion of the Singapore line, as far as regards communication with the colonies?—No person would attempt it. The route by Singapore would occupy 71 days, and a passenger would have to embark and land from six different vessels, and have 16 hours' van travelling across the isthmus.

2288. How do you make out six different vessels?—First, he embarks at Southampton, and he is landed at Alexandria; from Alexandria he gets into a punt, which conveys him to the Nile; at the Nile he gets into a river steamer, and he is carried up the Nile to Cairo; then he gets across the isthmus to Suez in a van, and at Suez he embarks in another steamer, which carries him to Ceylon; then he gets into another, which leaves him at Singapore; and then he gets into the Australian one, which is the sixth vessel.

2289. Mr. *Mangles.*] What objections have you to the Panama route?—The Panama route is rather shorter than the route by the Cape of Good Hope; but there are many objections against the Panama route, particularly the landing at Chagres and crossing the isthmus, which would be very inconvenient, both for passengers and goods. The route by Panama is 12,464 miles, being only 1,000 miles less than the passage by the Cape, to balance the inconvenience of landing at Chagres, crossing the isthmus, and embarking at Panama, and under nearly incessant rain; for, according

Captain *W. C. Doutty.*

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according to Mr. Lloyd, who surveyed the isthmus, "The dry season is from the end of December to April, and the rainy one from April to December, or eight months; and there is hardly a mile of land in the whole province which is not in the rainy season intersected by some little river which carries off the superfluous water, and is occasionally difficult to pass."

2290. Have you not heard that there is going to be a railway across the isthmus?—Yes, but it will be some time before it is made. The railway was proposed in 1837.

2291. After you have passed Cape Leeuwin, what course would you take for the Cape of Good Hope?—You would run down in the south-east trade; you would get the south-east trade between 28° and 30°; sometimes I have had the south-east trade to the southward of Cape Leeuwin. The south-east trade when obtained would carry you down to the Mauritius or Madagascar, from whence to off Algoa Bay the wind is generally favourable.

2292. Mr. *Mangles.*] As you say that the Cape route is 1,000 miles the longest, why do you suppose that it would be performed more speedily than the Panama route?—Because crossing the isthmus would occupy a great space of time, and another hindrance would be the coaling, and the various circles you would have to make among the islands of the Pacific. My opinion is, that the navigation of the Pacific is equally uncertain with the navigation through Torres Straits.

2293. Are not you aware that the Pacific Steam Navigation Company have offered to contract to do it in a shorter time than the Cape route?—They may, but they will not do it; they cannot do it.

2294. Are you aware that that company is composed of responsible parties, and that they have offered to contract to do it?—By the Cape line it may be done in 64 days; the Panama line will take 67, and the Suez line 71 days.

2295. Are you aware that the company themselves say that they will do it in 61 days?—They will not do it in that time; they now take 24 days to Chagres.

2296. Are you aware that the Royal Mail Steam Packet Company is under contract to perform that passage, with their new boats, in 19 days?—The Royal Mail steamers now take 24 days to Chagres; their time is 23 days and 23 hours.

2297. You are not aware that they are under contract to do it, with the new boats, in 19 days?—No.

Martis, 13° die Maii, 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. Stanley.
Mr. Divett.	Mr. Corry.
Mr. Henry Currie.	Mr. Berkeley.
Admiral Bowles.	Mr. Bright.
Mr. Scott.	Mr. Cowper.
Sir James Hogg.	Mr. Wilson.
Mr. Mangles.	Lord Naas.
Mr. Willcox.	

VISCOUNT JOCELYN IN THE CHAIR.

Captain *Henry Smith* (B.), R. N., called in; and Examined.

Captain *H. Smith*, (R.) R. N. 13 May 1851.

2298. *Chairman.*] WHAT rank do you hold in Her Majesty's service?—Captain.

2299. Have you been lately in the command of a steamer?—I commanded the "Rattler," the first screw steamer in Her Majesty's Navy, in part of 1844, and 1845 and 1846.

2300. From what you yourself have witnessed, do you think that the screw answers?—It answered admirably in the "Rattler."

2301. In the "Rattler" you tried it as a full motive power?—As a full motive power; four tons and a quarter to a horse.

2302. Did you ever try it as an auxiliary?—Frequently.

2303. What proportion of power to the tonnage do you consider to be full power?—Sailors disagree upon that point; but I should think four and a half or five tons to the horse power would be full power, especially in a screw vessel. If I commanded a ship properly built for the screw, I should think it full power if I had five tons to the horse power.

2304. What should you consider to be auxiliary?—I should say anything under that would be auxiliary; that is my opinion, but sailors all disagree upon that point, I fancy.

2305. Can you state whether the shifting or feathering screw works well?—I never had a ship that had a feathering screw; we tried several screws in the "Rattler;" we tried the uniform pitch, and the increasing pitch, and Messrs. Blacksland & Steinnan's screw, also the Parabolii.

2306. Which of those screws do you consider worked the best?—

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best?—I consider that the increasing pitch screw was the best.

2307. Have you ever known the screw fail?—Never while I was in the "Rattler."

2308. Have you heard of instances of its failing?—I have heard of such things.

2309. Do you know what the cause was?—Some of them have lost the arms of the screw.

2310. Do you consider that it has completely succeeded in any case?—We were pitted against the steam boats of the squadron, and I never was out of my station; but the other vessels were not to be found if it came on to blow strong; they were all out of sight the next morning.

2311. What pace did you get out of the "Rattler"?—Eleven and 12 knots under canvas alone, and 13 knots under steam and canvas together.

2312. How do you get to windward in a screw steamer rigged fully for sailing?—In the "Rattler," if the wind was light I could go directly ahead. I should steer directly for my port. If I met a heavy gale of wind I should sail and steam on a wind, the same as I would in a sailing vessel.

2313. What was the maximum speed of the vessel under steam only?—About eight and three quarters and nine knots; it depended upon her draught of water; if deep, eight and a half; as she drew light, the velocity increased.

2314. Mr. *Corry.*] Was not the "Rattler" the first screw vessel built for the Royal Navy?—The first; she was built for a paddle-box boat.

2315. Have great improvements taken place in the screw since that time?—I have no doubt of it, because her engines were intended for paddles; they were put in longitudinally instead of being put athwart-ships, and during the whole time I was in her she worked with engines intended for paddles.

2316. You think that if a vessel were built now of the same size as the "Rattler," and the same horse power, a better result would be obtained?—No doubt of it.

2317. *Chairman.*] When was the "Rattler" built?—The "Rattler" was launched in 1843.

2318. When blowing hard would you prefer the screw or paddle machinery of equal power, in going to windward?—That depends upon circumstances. If I were upon a lee shore I would prefer the screw. If I were going upon a passage, and had a vessel of five, or six, or seven, or eight hundred horse power,

power, I think, as I have never tried it with the screw, I should take the paddle, which I have tried.

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2319. Mr. *Corry.*] Were you in command of the "Rattler" when an experiment was tried between her and a paddle-wheel steamer of the same size and power?—I was, when the trial was made with two.

2320. What were the names of those vessels?—The "Polyphemus" was one, and the "Alecto" was the other.

2321. What was the result?—In favour of the screw, except upon one occasion in going head to wind. I was sent to look for a gale of wind. The other vessel was under my orders, and I was desired by the Admiralty to go into the North Sea and look for a gale of wind. I went and anchored on the Dogger Bank; I met a gale of wind; I then went at it head to the sea as hard as we could drive, and during three or four hours in that position, I think the paddle-box boat had slightly the advantage. But this is to be taken into consideration: we lost the race, but our engines not being made for the screw, and having been placed longitudinally in the vessel, we threw ourselves out of gear, which stopped the engines. Now when the engines are once stopped in a gale of wind, going head to wind, the ship must lose considerable way, and during that time the other ship beat us by about a quarter of a mile.

2322. Were you in command of the "Rattler" when she went round from Plymouth to Pembroke under the orders of Lord Adolphus Fitzclarence?—I was.

2323. Did not some accident occur to her upon that passage?—Yes; the glands of the pump of the hot well gave, and the water, instead of being thrown overboard, was pumped into the ship.

2324. Was that accident as likely to have happened in a paddle-wheel vessel as in a screw vessel?—Yes.

2325. It had nothing to do with the screw?—Nothing at all.

2326. *Chairman.*] Have you looked at the proposal which has been made by the screw company to carry out a line of communication, *viâ* the Cape, to Australia?—Not by the Cape. I have merely looked at it from St. Vincent's, from the Cape de Verds to Australia.

2327. That is the great circle line?—Yes.

2328. Are you acquainted with those seas?—I have been there; I have crossed the equator frequently.

2329. Do you see any difficulty which a steam ship, such

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as they propose to put upon the line, would have to encounter in that passage?—None whatever.

2330. Do you think the power which they propose to put into those vessels would be sufficient?—I am not exactly acquainted with what power they intend putting in; but I have made a little memorandum upon the subject. I have taken a screw vessel of 900 tons, and 200 horse power. I suppose her to carry 300 tons of coals: she would have fuel for 15 days. This is putting it the same as my own ship. From St. Vincent's she would sail to 7 degrees north; I calculate, taking the average, that she would get as far as 7 degrees north under sail; she would then steam from 7 degrees north to 6 degrees south; that would be 980 miles, and that would take her four days. She would have perfect calms during that part of the voyage. She would then take the south-east trade, and we will say she would run as far as 28 degrees south. In those latitudes, on both sides of the equator, especially on the Tropic of Cancer side, what are called the variables generally prevail. I have allowed her to steam for four days, making during that time 12 degrees of southing, which would bring her into 40 degrees south; at 40 degrees south she catches a westerly wind, and then sails to within 600 miles of Port Phillip, and I suppose that 600 miles would be done in three days under steam, which makes altogether 11 days, which, taken from 15, leaves her four days' coal when she arrives at Port Phillip, having 15 days' full consumption of coal on board when she starts. Now my duty at the present moment is looking after screws, and I have lately at Liverpool seen the "City of Glasgow" steamer, which is trading between Liverpool and Philadelphia, of 1,610 tons and 350 horse power. She is sometimes 23 days under steam; allowing that she uses 9 lbs. per horse power per hour, which I have allowed throughout my calculation, she must carry 776¼ tons of coal; I am only making these calculations to show that it can be very easily done. There is a ship, the "City of Glasgow," 23, 24, or 25 days at sea under steam, navigating the worst sea in the world.

2331. Have you calculated the return passage?—No, I have not.

2332. Have you been upon the coast of Australia?—I have frequently sailed very close to New Holland.

2333. At what period of the year?—I was cruising at all periods of the year. I went out in 1810, to assist in taking the Isle of France, and I was afterwards stationed at the Isle of France; we used to run backwards and forwards to the Cape

Cape of Good Hope. I have crossed the equator in going to the East Indies; I have crossed the equator in the "Northumberland," when we took the eastern route; I have crossed the equator in the "Vengeur," in going to the Brazils, and I have also crossed it again in going round Cape Horn, in the "Tyne." In fact, there are few seas which I have not navigated more or less, with the exception of those of New Zealand.

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2334. Mr. *Corry.*] You have stated that you would prefer a screw vessel to a paddle-wheel vessel in a gale of wind upon a lee shore; would that observation apply to a full power vessel, like the "Rattler," only, or would it apply to an auxiliary screw vessel?—I only answer for my own vessel, a full power vessel like the "Rattler," for this reason; when we were going two knots and a half, the moment we clapped sail on the ship, we went nine.

2335. Mr. *Currie.*] What were the circumstances under which you said that you would prefer a paddle steamer?—If I commanded a steamer of 500 horse power, and it was blowing a hard gale of wind, and I had to carry the mails, I would rather go at it in a paddle steamer than I would in a screw vessel, when there were no dangers under my lee; but if I was embayed, I should be more likely to get clear in a screw ship than in a paddle ship.

2336. Mr. *Divett.*] Do you know the "City of Glasgow" steamer, of which you have spoken?—I have seen her.

2337. Do you know anything as to the number of her voyages?—I do not; but the gentleman to whom I went about using the screw said, that they were so much pleased with her, that they were building another of that description upon the same lines, to run from Liverpool to Philadelphia.

2338. You spoke of that passage as being about the worst voyage that a ship could take?—I think it is the worst voyage in the world.

2339. You allude particularly to the outward voyage?—Yes.

2340. *Chairman.*] With reference to the winds which prevail upon the west coast of Australia, do you consider that they are of such violence as to prevent any certainty in the time of the passage by that route?—In the year 1847 a plan was formed for a monthly steam communication from England to the Brazils, Buenos Ayres, the Cape of Good Hope, Mauritius, Southern and Western Australia, Sydney, and New Zealand; steamers to be the same as Cunard's last. If that plan had gone on I should have been the person to look after

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it, and see that it was carried out perfectly, and I am quite sure that we could have carried it out; we were to go by Cape Leeuwin both going and coming.

2341. What is the paper you hold in your hand?—That was a proposition some time ago laid before the Admiralty.

2342. When was it laid before the Admiralty, and by whom?—By Mr. Macqueen and myself, I think, in 1847; this paper I will hand in. (*The same was delivered in*). I produce this to show that the thing was well considered at that time, and that we went by Cape Leeuwin both backwards and forwards; and we put it down that we should do it in a certain time, and thought it no hardship at all. As the superintendent of the company, looking after their vessels, and seeing that they performed their routes, I thought it no objection.

Vide Appx.

2343. Admiral *Bowles.*] You do not think there is any practical difficulty in that route?—None whatever.

2344. Do you think that the gales upon the coast of New Holland are at all equal to those in the Bay of Biscay, and between this country and North America?—I have never been within 300 miles of the coast.

2345. You have never been upon the part of the coast between Bass's Straits and Cape Leeuwin?—No.

2346. How long did you command the "Rattler"?—I commanded her for two years.

2347. During the greater part of that time you were employed in making experiments to test the advantages of the screw as contradistinguished from the paddle?—Yes.

2348. What was your ultimate opinion upon the subject?—With a vessel of equal power, my opinion was decidedly in favour of the screw; there can be no doubt about it.

2349. Was the "Rattler" full-rigged, or was she rigged as other steam vessels were at that time?—No; the "Rattler," when I first commanded her, was rigged as a fore-topsail schooner, but that we found was not sail enough. Afterwards, upon writing to the Admiralty, she was rigged as a barque; she was very lightly rigged.

2350. Had she as much sail as vessels of her class would have carried?—Certainly not.

2351. You think that with the experience of the present day, and using the screw as auxiliary, a vessel fully rigged, like other ships, would find great advantage from the screw as an auxiliary power?—There is no doubt of it; but I would say this, that I do not think that screw vessels ought to be built like other men-of-war sailing vessels. A screw vessel wants

wants length, and does not want extreme breadth; her lines ought to be uncommonly fine.

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2352. But that would be no matter of inconvenience?—None whatever; rather otherwise.

2353. You think that altogether, the screw vessels of the present day would be very superior to the "Rattler"?—I should hope and think so.

2354. Mr. *Willcox.*] The "Rattler" was a full power steamer?—She was.

2355. Have you ever commanded an auxiliary screw vessel?—Never; I have used the screw in the "Rattler" as auxiliary, that is, by using one boiler.

2356. Mr. *Mangles.*] Has your evidence, with respect to Cape Leeuwin, and the seas from Cape Leeuwin to the Cape of Good Hope, reference to a full power steamer or to an auxiliary screw steamer?—The account I gave you here was 900 tons to 200 horse power; that is about four and a half tons to a horse power; I call that full power; but I have made other calculations, which, if you take a less horse power, will give a great advantage to the vessel, because she would carry a great deal more fuel.

2357. In the course of your evidence you have spoken of five tons to one horse power as full power; are you aware that that is very inferior to what Cunard considers as full power, and very inferior to what the West India Mail Packet Company consider as full power, and that Cunard is building about 800 horse power to 2,200 tons, and that the West India Mail Packet Company are building steamers of 2,200 tons and 800 horse power?—That is very true; it is quite arbitrary. People say, what do you call a full power steamer? You may call it two tons to a horse, or you may call it four or five tons to a horse; there are some vessels that pull 8½.

2358. You spoke of the "Rattler" as having full power, and you said that her speed was 8¾ miles an hour; do you call that full power for a steam vessel?—I draw this conclusion: the "Alecto" and the "Polyphemus" are full power paddle vessels in our service, and we beat them nearly a mile an hour.

2359. You ran those steamers out of sight in the night?—Yes.

2360. Should you have been able to run Cunard's steamers or the West India Mail steamers out of sight in the night?—Certainly not.

2361. Then all that your evidence proves is, that the paddle-wheel steamers of Her Majesty's Navy are very inferior vessels?—

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vessels?—It depends upon what vessels you take. I fancy that if I had commanded the "Terrible," I would have laughed at any paddle vessel that they have in the Royal Mail Steam Packet service, or if I had commanded the "Scourge;" those vessels would go 12 knots an hour.

2362. Then as the "Rattler," which you call a full power vessel, could only go 8¼ or 9 knots an hour, do not you call her very inferior to Cunard's and the West India Mail steamers?—There can be no doubt of that.

2363. If others go so much faster, how can you call that full power?—"Full power" is an arbitrary term; every man has his own standard.

2364. Mr. *Scott.*] In short, it is an arbitrary standard?—It is.

2365. Mr. *Corry.*] Are not several steam vessels, which have been built for the navy since the "Rattler," of much larger power in proportion to their tonnage than one to five?—I believe so.

2366. Was it your meaning that you considered one to five might be called a full power, or that one to five was the proportion that would give the best results?—No; a vessel may be called a full power steamer that is pulling five tons to the horse; but if she pulls five tons to the horse power, I cannot expect her to have the same speed as a vessel that is pulling two tons to the horse power.

2367. Your meaning was, that one to five was the lowest proportion that could be considered full power?—Yes.

2368. Not that that was the proportion that would give the maximum speed?—Not at all.

2369. Sir *J. Hogg.*] What was the power of the "Terrible"?—She was 800 horse power; I think she was about 2,000 tons.

2370. A screw vessel?—No, a paddle.

2371. Mr. *Berkeley.*] What was the power of the "Rattler"?—She was nominally 200 horse power.

2372. What was her tonnage?—Eight hundred and eighty-eight.

2373. Was she called an auxiliary screw?—No; she was considered full power.

2374. Is it not an established rule that one horse to three tons is full power?—No, I never heard it.

2375. Not in your service?—Not in our service.

2376. Do you consider that postal arrangements can be entrusted to an auxiliary screw, so as to produce the result that the arrivals shall be as certain as Cunard's?—If you give

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give them a certain amount of duty to do, I should fancy that it could be done; if the auxiliary screw undertakes to do eight knots an hour, and Cunard's line undertakes to do ten, or ten and a half, I think the one may be done with the same punctuality as the other.

2377. Do you consider that a vessel of 1,400 tons and 250 horse power, such as we have heard of, with a cargo of 800 tons, besides coals and passengers, would be capable of making the passage home from Australia at the rate of nine knots, by the direct course?—I have not given that consideration. I think she would do it going out; it would take some time to consider it in coming home. I do not mean to say that she should take 800 tons of cargo; I mean to say that she should be well provided with coal. I heard Captain Fitzroy say, that she would do that; but if I were engaged in the first voyage I should take care to take a sufficient quantity of coal, and leave 100 tons of cargo behind me the first voyage.

2378. Captain Fitzroy stated that in the event of a gale of wind, he should not attempt to face it, but edge away from it. Now that being the evidence of Captain Fitzroy, would not that create a chance of his running into another gale of wind, and consequently cause very great uncertainty as to his making his course straight?—In those latitudes, in crossing the Trade, you are sure of a positive and certain wind. In some parts of the voyage, she would be almost certain of winds in which she would make 10 or 11 knots an hour.

2379. In coming home would not the winds be contrary?—If they came that route.

2380. Could you so fashion the route as to prevent that?—I think if you came by Cape Leeuwin you might get away to the northward, and get the south-east trades, and come by the Cape of Good Hope.

2381. Would not that increase the distance very much?—No, I do not see that it would.

2382. *Chairman.*] Are you connected with the General Screw Steam Packet Company?—No.

2383. Have you seen the ships building for the screw company?—In my calling I went and looked at them the other day.

2384. Do you think that they can run from St. Vincent to Port Phillip without coaling?—No doubt of it. I wish I had 1,000*l.* depending upon running such a vessel as I saw there, a vessel of 900 tons.

2385. And take cargo too?—And take cargo too.

2386. What vessel was it you saw?—I do not know her

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name, but they told me she was 900 tons, I think they said 150 or 200 horse power; but her masts were so beautifully placed, and her build was so fine, that I am positive she would do it. I have stated the calculation I have made. It struck me that they should have 15 days' coal after leaving St. Vincent, and I think they would have four days to spare on arriving at Port Phillip.

2387. What proportion would that leave for cargo?—I suppose 400 or 500 tons for cargo.

2388. Mr. *Mangles.*] With provision for a large number of passengers?—Certainly.

2389. And water?—Yes; a man going that voyage would get a refrigerator on board, and use distilled salt water for the cooking and washing, and have the tank water for the people to drink.

2390. If unfortunately the vessel were to meet with heavy easterly gales to the southward of the Cape in going out, what course would you recommend?—I should stand to the southward; I remember once going from the Cape of Good Hope in the way you speak of now to the Mauritius.

2391. Mr. *Corry.*] In the way that engines are constructed now, would not engines nominally of 250 horse power work up to a higher power than the engines of the "Rattler"?—I cannot answer that question; but I never knew an engine that did not work up to more than the nominal horse power.

2392. Sir *J. Hogg.*] You spoke of looking at particular ships in the discharge of your duty; what particular duty do you allude to; do you hold any particular office under Government at present?—I am employed by the Patent Screw Propeller Company, the patentees of the screw, and my duty is to look after every screw vessel that I can get hold of, to see if they are using a particular kind of screw.

2393. Admiral *Bowles.*] To guard against infractions of the patent?—Yes.

2394. Mr. *Mangles.*] Do you know anything of the navigation of the Pacific?—As far as Cape Horn to Lima.

2395. *Cæteris paribus* as to steam power and the build of the vessels, which should you think the most certain navigation as to time, the navigation of the Pacific or of the Indian and Atlantic oceans?—I have heard it here stated that the Pacific was quite a mild sea; during my experience I had to make several passages from Lima and the Intermedus to Valparaiso in men-of-war, and I was always obliged to stand well out from the land to get a westerly wind to carry us up. If you were to meet a westerly wind at Panama, I do not know

know how you would get across to the trades after getting a certain latitude; but I am speaking of the part where I navigated. Captain *H. Smith* (R. N.), R. N.

2396. You do not think that be the advantages of the screw ever so great in other seas, it would be particularly applicable in the Pacific?—I do not say that it would not; I think the screw is capable of doing anything. 13 May 1851.

2397. But you do not think that the Pacific has any peculiar advantages; it is not less tempestuous than other seas are?—I never saw a gale of wind all the time I was in the Pacific, except the northers in Valparaiso; we never saw them lower down the coast.

2398. Would not that state of things give great advantages to a screw steamer in crossing the Pacific?—No doubt of it; she might make the passage in a certain given time.

2399. Would not that give her a great advantage in the Pacific, as compared with other seas that are more tempestuous?—Yes; but you must take into consideration that when a screw vessel gets as far as New Zealand, from New Zealand to Sydney it is a very rough passage; she would have a great deal to contend with; I think just as much as in going from Cape Leeuwin to Port Phillip; and I think the Atlantic passage as laid down to go to St. Thomas's, is one of the worst routes that ever a steamer could undertake, except perhaps going to Bermuda direct from England.

2400. Will you compare the route from Sydney to Panama with the route from Sydney to England, *viâ* the Cape of Good Hope; *cæteris paribus* with reference to the build and power of the vessel, what do you think of those two voyages?—I think they are about equal.

2401. You think there is no advantage from the superior calmness of the Pacific?—I should fancy not; you would have fine weather from the time you entered the Tropics. In going out from England, the very moment you got into the trade wind, you would have the north-east trades, and you cross the equator into the south-east trades.

2402. Admiral *Bowles*.] With respect to the Pacific, would not the fineness of the weather in the Pacific and the lightness of the winds make it necessary to burn a greater quantity of coal; and would not, therefore, that passage be for that reason disadvantageous to a certain degree?—If she had those light winds, certainly she must use steam; she could not keep up her speed else.

2403. *Chairman*.] Is the "City of Glasgow" steamer wood or iron?—Iron.

2404. Do

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2404. Do you consider that the screw is more applicable to an iron vessel than to a wooden one?—I would not say that. I think that for navigating the Indian seas iron is far preferable to wood, in either paddle or screw vessels, on account of vermin getting on board; the ants will destroy the wood; but I am not prepared to say that in northern latitudes iron is preferable to wood.

2405. Mr. *Bright.*] Do not you think that the fixings can be made more permanent and less liable to shift in an iron vessel than in a wooden vessel?—I have no doubt of it; but still we look for velocity in our service. I think that a wooden vessel coppered is likely to be a faster vessel than an iron one; that is my opinion.

2406. Mr. *Corry.*] What is the ground of that opinion?—I have certainly seen some very nice vessels built of iron, but I have seen some Government vessels in which even the rivets were not counter-sunk, and all those deteriorate the vessel's sailing. I have been in Mr. Scott Russell's, and seen there some vessels that were very well built. I saw one built for the Russian government, she was beautifully built.

2407. If an iron vessel were properly constructed, do you think she would not be equal to a wooden one?—I am not prepared to say yes.

2408. Mr. *Willcox.*] Would not she draw less water?—She would, no doubt.

2409. Is not that a great advantage?—Not always; I think that in a very tempestuous sea for a ship to be light is rather a disadvantage.

2410. Generally speaking, is not it an advantage for vessels to draw less water?—In a screw steamer it certainly would not be, because if she was very light she would not immerse the screw, and you would lose half the effect.

2411. Mr. *Cowper.*] Is there not very great inconvenience in the Indian service from the fouling of the bottom of iron vessels?—I do not know; I never experienced it.

2412. Does not an iron bottom require a great deal more care than a copper bottom, to prevent it from fouling?—No doubt of it.

2413. When it does foul, is not the speed of the vessel materially diminished by it?—Very materially.

2414. Mr. *Berkeley.*] Is not a screw vessel found to draw more water than a paddle-wheel vessel?—I believe she does.

2415. Mr. *Corry.*] Is not iron more used than wood as a material for building merchant steam vessels?—Infinitely. In all the vessels that I have seen I only came across two wooden

screw

screw vessels, and those are very old: the "Malcolm Brown" is one, and the "Ann of London" is the other. Those two are the only wooden screw vessels that I have met with in the Thames out of about 30. Captain *H. Smith* (B), R. N. 13 May 1851.

2416. Are you aware of the reasons which have induced the merchant service to give the preference so decidedly to iron?—I cannot say that I am.

2417. Is not the wear and tear much less in an iron steam vessel than in a wooden one?—There can be no doubt of it. Mercantile men do it to save money. I know that in the service we have often taken plans from the mercantile service. I remember there was great difficulty to get chain rigging or chain cables into Her Majesty's service. It was not till long after they were used in the mercantile service that they were brought into the navy.

2418. Iron vessels are much more economical than wooden vessels?—I imagine so.

2419. Mr. *Willcox.*] Have you ever heard of an iron vessel requiring repairs in her hull except from accident?—No.

2420. Mr. *Corry.*] Do you know whether there is much difference in the cost of building iron vessels and wooden vessels?—I am not aware. I believe it is about the same.

Mr. *Francis Pettit Smith*, called in; and Examined.

2421. *Chairman.*] HAVE you turned your attention to the screw as applied to steam vessels?—I have. Mr. *F. P. Smith.*

2422. Under what circumstances?—First, as the original projector of it; not strictly the original, but perhaps I may say the first who applied it successfully to the navigation of ships, about 16 or 17 years since.

2423. Will you state the experience you have had of the screw as applied to ships?—My experience began with a very small model, and I gradually worked on in experimental boats, and thence to a vessel called the "Archimedes," and after that in the first Government screw ship, which was called the "Rattler," constructed partly under my superintendence by the Government, a vessel of about 900 tons. From thence we went on to several merchant ships. As early as 1842 there was a ship of 1,515 tons, called the "Great Northern;" and a great number of ships were built, with all of which I had something more or less to do in the construction and working them, and so on.

2424. Did you hold an appointment under the Admiralty?—I did, for about four years.

2425. What

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2425. What was that appointment?—Superintendent of the construction and fitting of screws for ships in the navy.

2426. Do you consider the screw to have answered?—I think perfectly so.

2427. Both as a primary motive power and as an auxiliary power?—I think in every instance it has given great satisfaction.

2428. Have you turned your attention to that proposal for carrying out a line of communication between this country and Australia by means of screw steamers?—I have had a great many conversations with different persons upon the subject, but I have not been able to give much attention to it.

2429. Do you see any difficulty to an auxiliary screw steamer in a voyage of that kind on which she is likely to meet with violent gales of wind and severe weather?—Not the least.

2430. Have you seen any of the different trials of screw steamers?—I think I have seen 200 or 300. I have been present at nearly all the experimental trials of all ships which have been fitted with screws by the Government, and of most of the vessels fitted for the merchant service in this port at all events.

2431. What is the greatest pace which you ever saw got out of a screw steamer as a primary motive power?—I have seen 13 knots an hour.

2432. In what vessel?—The "Fairy."

2433. As an auxiliary power, what is the greatest speed you have known obtained out of the screw?—Ten to 10¼.

2434. Mr. *Willcox.*] As an average?—Not as an average, with foul weather and fair weather.

2435. Mr. *Corry.*] What is the proportion of horse power to tonnage in the "Fairy"?—About two and a half to one.

2436. The tonnage being what?—The tonnage is about 320.

2437. What do you consider the proper proportion for a full power screw vessel?—As much as you can possibly get in the ship, consistently with her other requirements.

2438. Should you consider a steamer having the proportion of one horse power to five tons a full power steamer?—I think that would be quite little enough.

2439. Mr. *Mangles.*] You mean that it would be too little?—Too little if you intend to acquire the speed of a paddle vessel.

2440. *Chairman.*] With such vessels as the company propose to build for the purpose of this communication, vessels of 1,700 tons, with 300 horse power, what pace do you suppose

pose they would average?—I should think fully eight and a half to nine knots. Mr. *F. P. Smith.* 13 May 1851.

2441. In saying that you make allowance for carrying cargo?—The cargo makes but little difference; that is one advantage in the screw, any difference in the draught of water does not affect the speed as it does with the paddle; it has frequently happened that paddle steamers go away at six and a half knots an hour, and ultimately finish at 10; the screw is not so much affected as the paddle is in that respect.

2442. Admiral *Bowles.*] You mean from the wheels being too deeply immersed?—Precisely.

2443. *Chairman.*] When using the screw and the sails at the same time, what pace do you consider that the vessels before alluded to would average?—I can only speak of one or two cases, where we have had a fair combination of steam and sail, and there I have seen 12 and 12½ knots an hour accomplished; but these are much finer vessels than any men-of-war steamers that I have been in, and I fully expect that they will exceed that rate; I have been in a man-of-war steamer, the "Rattler," when she was going 12½ knots an hour, with the combination of steam and sail.

2444. You have seen the screw applied to iron vessels as well as to wooden vessels?—Yes.

2445. In which do you consider it works best?—I do not think there is any great difference; I should prefer the iron; I think the fineness of the vessel is better carried out in an iron than in a wooden ship; it appears essential to construct the after-body of screw vessels as finely as possible; an iron vessel, I believe, admits of that more than a wooden one.

2446. Mr. *Bright.*] Do you find any difference in the wear of the machinery, especially in the iron of the screw, in an iron vessel and in a wooden one?—No, I do not think there is any difference in that respect.

2447. Is there any advantage in fixing the machinery in an iron vessel?—I think not; I think you may fix it as well in the one as in the other.

2448. Mr. *Willcox.*] Have not you known wooden steamers to vibrate considerably?—Some of the earlier ones did; that may have arisen from want of strength.

2449. Lord *Naas.*] Do you think that the vibration is greater in wooden steamers than in iron ones?—I think it is.

2450. How do you account for that?—I think they have hardly strength enough. The wooden screw ships have been built very much like an ordinary sailing ship, as if the ship had no power placed in that part where the screw is; I think the

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the wooden vessels require to be more strengthened there than they have been up to the present time.

2451. Mr. *Berkeley.*] Were you rightly understood to state that an auxiliary screw steamer can make on the average 10½ knots an hour?—I did not say on the average, but 10½ knots in smooth water.

2452. Are you aware that that is the average of Cunard's full power paddle vessels, namely, 10½ knots an hour?—That may be their average speed, but I do not mean to say that an auxiliary screw vessel, with a proportion of six tons to a horse power, would give an average of 10½ knots an hour; I have not seen that done yet.

2453. And you say 12¼ knots an hour under steam and sail; is that an average?—Not an average, but I have seen 12½ by a combination of steam and sail.

2454. As regards the consumption of fuel in screw vessels, how is that in comparison with paddle-box steamers, power for power?—I think precisely the same, power for power.

2455. *Chairman.*] What average do you anticipate that vessels with auxiliary screw power will attain in smooth water and under favourable circumstances?—Under favourable circumstances, I think they will keep up their speed to 10 or 10½.

2456. What speed do you think we might rely upon as the average in the voyage from the south coast of Australia to the Cape of Good Hope?—I think they would be able to use their sails occasionally in combination with the steam, and consequently would maintain a high average speed.

2457. Are you acquainted with the Southern Indian Ocean?—Not at all.

2458. But you know, from information, the general character of those seas?—Yes.

2459. Judging from general opinion about those seas, do you think that these vessels could keep up an average of 8½ knots an hour?—Quite; by judicious combination of steam and sail, I think they would average more than that.

2460. Mr. *Berkeley.*] Against a head wind, what pace would one of those auxiliary steamers make?—I suppose she could make very little way against a strong head wind.

2461. Could she make any?—I think she could.

2462. Would she not be obliged in a violent gale of wind to give up opposing it?—I think not; I have seen some very small power steamers make headway against the strongest gale of wind. It astonished every one.

2463. Lord *Naas.*] What difference does the screw make in

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in sailing on a wind?—Presuming that the speed of the vessel would be eight knots in smooth water, by the application of the full quantity of sailing power, I think the rate may be brought up to 10 or 10½.

2464. How much nearer the wind do you think a screw vessel can go than an ordinary sailing vessel?—I should think two points.

2465. Which do you think the most favourable circumstances for an auxiliary screw vessel; just before the wind, or with the wind on her quarter?—I think the wind on her quarter is the most favourable. In going sometimes against a strong head wind and a heavy sea, as a matter of course you have occasionally to go also with the sea and with the wind; therefore if you take the average, with and against the wind, it would come up to nearly the same as in smooth water.

2466. Mr. *Berkeley.*] My question had reference to the capability or incapability of an auxiliary screw vessel making way against a gale of wind?—My experience of the auxiliary screw power has led me to this conclusion: that any commander of a screw vessel of that character would not put his ship head to wind, as she would make better way by beating to windward.

2467. Although of course he would lose his passage?—He would increase the distance, but he would accomplish his voyage as quickly, if not quicker.

2468. Mr. *Mangles.*] What do you think of the Pacific as a place for screw steamers; you have heard of the Panama and the Sydney route?—I have heard of it, but I am not much acquainted with the route.

2469. Mr. *Bright.*] Will you give the Committee your opinion as to the cost of repairs of iron ships as compared with wooden ships, taking the ships built now, with all the advantages of experience and science brought to bear upon them?—My knowledge upon that subject is not very great, but judging, from what I have seen of the current repairs of iron steamers I think they are less than of wooden steamers. I think it remains for time to prove how much it will be in the long run. We have no steamers that have been in existence any great length of time, therefore we can hardly say what the repairs will amount to.

2470. With regard to the hull of the vessels, do you feel confident that the cost of repair of the hull of an iron ship would be smaller than of a wooden ship?—I think it will be less.

2471. You are an engineer?—Yes.

2472. Looking

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2472. Looking from this time forward to the building of iron ships and of wooden ships, is it your opinion that there is more scope for the application of machinery and of scientific improvement in the building of iron ships, so as to go on diminishing their cost, than there is with reference to the probable future building of wooden ships?—I am hardly prepared to answer that question. The machinery for constructing an iron ship is very simple, and really seems to be reduced to as small a quantity of material as it can possibly be reduced to. Nearly all the operations in building iron ships are performed by machinery.

2473. Is that the case with regard to wooden ships?—Not so much.

2474. Mr. *Corry.*] Do you recollect the horse power of two men-of-war steamers which were built about six years ago, the "Rifleman" and the "Sharpshooter"?—Two hundred horse power.

2475. What was the tonnage?—Four hundred and twenty-six tons.

2476. Was not a much smaller engine afterwards put into one of those vessels?—An engine of 100 horse power was put into the "Rifleman."

2477. Thereby reducing the proportion of power to tonnage one-half?—Yes.

2478. What difference did that make in the speed of the vessel?—She produced precisely the same speed. She was very badly constructed abaft in the first instance; and whilst the alteration of the machinery was going on, the stern of the vessel was lengthened, so that 100 horse power produced the same rate that 200 had previously done.

2479. If that alteration in the after-body of the ship had not been made, do you think there would have been a great diminution of speed from the diminution of horse power?—If the form of the vessel had remained the same, there would have been a proportionate diminution of speed.

2480. What proportion?—I dare say the speed would have been three-fourths what it was before.

2481. The maximum speed having been what before?—Eight knots an hour.

2482. And it would have been reduced to what?—To six or 6¼.

2483. Mr. *Currie.*] You say that you were in the "Rattler" when she first went to sea; she was one of the first vessels fitted with the screw?—She was the first.

2484. Had

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2484. Had she machinery for lifting the screw?—Not at first.

2485. Do you consider that a great improvement?—A very material one.

2486. Had she a feathering screw?—No.

2487. You consider that a vessel fitted with the screw can sail as well as any frigate in the navy?—I think quite so.

2488. Do you think that a vessel of that sort would have very great speed under canvas?—She ought to have as much as if she had no engine in her. I think that a properly built screw ship ought to be as good a model of a sailing ship as you can make.

2489. Do you consider that a screw ship can screw and sail at the same time?—I have seen a great many do it remarkably fast.

2490. The screw does not impede the sailing?—No, it assists very materially.

2491. Can a paddle vessel paddle and sail at the same time?—They do sometimes, but they do not make much of it; they do not carry sufficient canvas to increase the speed of the vessel much.

2492. Will you explain how it is with the screw?—In a paddle vessel the quantity of canvas is small in proportion to the tonnage of the ship, and the resistance is greater than in a screw ship. When a ship is going 10 knots an hour under steam, it will require an enormous increase of power to add another knot to it; but paddle vessels, in nine cases out of ten, carry so small a proportion of canvas, that it could not produce an extra knot unless under very favourable circumstances; but a screw ship is rigged in most cases as fully as if she had no steam at all, and I have seen several instances of screw ships where the steam speed has been accelerated by two or two and a half knots, by the addition of canvas.

2493. With regard to the extreme speed of a ship under steam, it depends upon the size of the boiler; the larger the boiler the greater the speed?—Yes; a paddle vessel, unless going immediately before the wind, can scarcely carry sufficient canvas to increase her speed, because when she is depressed on one side, it affects her paddles so materially, that they sometimes go slower by the addition of canvas when the wind is a-beam, by one of her paddles being too deeply immersed, which causes it to work at great disadvantage.

2494. Therefore there is great expense in using coal under such circumstances, with very little or no benefit?—Yes.

2495. Mr. *Divett.*] Do you think that the machinery of

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the feather is liable to derangement?— I had some fears about it; but an ounce of practice is better than a ton of theory; the result of the three vessels which have been to the Cape is better than I expected.

2496. Do you think it may advantageously be applied to larger vessels?—I think size is of no consequence.

2497–8. Are you of opinion, that the feathering screw is likely to be as efficient with reference to the sailing of the ship, as the lifting screw?—I think, with reference to the sailing of the ship, it will not make much difference, but I think it very essential that you should be able to get your screw up, whether it is feathered or not.

2499. You do not think that the plan of feathering obviates the necessity of having the power of getting it up?—I think not; I have been in a great many vessels where we found accidents occur when we least expected it, such as getting a rope round, or getting something foul of the screw that would impede it.

2500. Do you think that the feathering screw is more liable to accident than the ordinary screw?—I must say yes, because it is in two, or three, or four, or five parts.

2501. You do not think that the liability to accident is increased in screws of greater power?—I think not; I think, if the proportions are carried out properly, the size has little or nothing to do with it.

2502. Mr. *Currie.*] How long does it take to get the screw out of the water?—It depends upon the arrangement that is adopted.

2503. In the case of a ship which has the best arrangement, how long does it take?—The best is on board the "Hogue;" that takes 10 minutes.

2504. How long to put it back again?—One or two minutes.

2505. When once the screw is out of the water, then the vessel becomes a sailing ship?—As good a sailing ship as if she had no steam in her.

2506. Mr. *Cowper.*] Are you aware of the circumstances under which the feathering screw got out of order in the last voyage of the mail packet to the Cape?—No, I am not.

2507. Lord *Naas.*] Do you think that a screw steamer is more liable to accident than a paddle steamer?—No; I do not see why she should be.

2508. Is it not your opinion that if anything does go wrong with the screw, it is fatal to the screw, whereas the paddle vessel can work with one engine?—The screw vessel being a thoroughly rigged ship, she is in as good condition if the screw fails

fails as any ordinary sailing vessel, which is not the case with a paddle steamer; but I have seen very few accidents to the screw machinery. All Government ships carry a spare screw, which can be shipped in a short space of time when required.

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2509. Do you think that the great length of the shaft between the engine and the screw, and the distance of the motive power from the engine, render it more liable to accident?—Not at all.

2510. Mr. *Corry.*] Have any circumstances come to your knowledge of screw vessels being wholly disabled as regards the machinery, by accidents occurring at sea?—One or two instances have occurred, and in those cases they have made very good way under canvas. The best instance I can quote was the case of the "Niger" two years ago; when she got short of fuel she beat up the Channel, and passed everything under canvas.

2511. Mr. *Currie.*] With regard to the water line, how is the machinery of a screw vessel?—In a screw vessel it is five or six feet below the water.

2512. With a paddle steamer how is it?—It is five or six feet above.

2513. The inference is obvious?—Yes. It is possible to construct screw machinery, so that it shall be six or seven feet below the water line.

2514. Mr. *Willcox.*] In a head sea, when a screw vessel pitches, is not the screw out of the water frequently?—Partially.

2515. So as to be useless for the moment?—I think not useless.

2516. Have you not known it to come clean out of the water?—Never.

2517. Mr. *Corry.*] Have you ever been on board screw vessels in a heavy gale of wind, with a heavy head sea?—Several times.

2518. Did she perform satisfactorily?—Equally satisfactorily as the paddle vessel that was in company with us at the time; she maintained the same speed.

2519. Mr. *Currie.*] Was that in the North Sea?—In the North Sea.

2520. Mr. *Corry.*] On board the "Rattler"?—Yes. I will explain the reason why I think that the pitching of the screw out of the water is not so great a drawback as it appears in the first instance. The screw is thrown out of the water by the pitching only for a second or two at the utmost; but a paddle vessel rolling, will sometimes roll over for several

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seconds before she will come back again; the pitching of the vessel is much more rapid than the rolling of the vessel.

2521. Mr. *Cowper.*] Are you able to state what the comparative expense would be of two packets of the same tonnage, one working as an auxiliary screw vessel, and the other by full power paddle wheels?—I think that, without going into particulars, you might say that it would be just in proportion to the difference of the power.

2522. Would that calculation include the saving upon the coals, and also the additional amount of stowage that was obtained in the screw vessel?—Yes.

2523. Mr. *Bright.*] When you say that the comparative expenses would be in proportion to the difference of power, do you mean that there would be no additional gain in the screw ship by reason of the additional cargo which she could carry, or do you take into consideration the gain from the additional cargo in the screw ship in order to bring the cost in proportion to the power to be the same as that of the paddle boat?—It must be divided into two parts: first, the current working expenses of the ship; in those a saving would be effected by the difference of power of the two ships: then, of course, there would be a saving upon the screw ship, inasmuch as she would be able to carry a great many more tons of goods than a paddle vessel of the same tonnage.

2524. Lord *Naas.*] Your answer has reference to the case of a voyage being made by a screw vessel and a paddle vessel under steam the whole way?—Yes; but there are many voyages of which a screw ship will make a large proportion under sail alone.

2525. Your answer did not include the saving of fuel obtained by that means?—I did not include that saving of fuel; I presumed that they steam the whole distance; but if they perform a large portion of the voyage under canvas there is a still greater saving.

2526. Mr. *Cowper.*] Comparing two vessels, one of which had an auxiliary power of 200 horse, and the other vessel had full power of 400 horse, you would say that upon the average the one would cost only one-half of the other?—Yes, as regards their working expenses and their original cost.

2527. Are there other considerations besides that?—In the case of the auxiliary screw you ought to calculate upon saving some fuel by using the canvas without steam in some parts of the voyage.

2528. Mr. *Bright.*] In the voyage from this country to Australia, comparing one vessel with a full power screw with another

another vessel with full power paddles, do not you imagine that the saving would be considerable on the screw by the use of canvas?—I think so, because there are times when a fully rigged sailing ship would go as fast as a paddle steamer.

2529. In that part of the world where regularity of winds may be fairly calculated upon, could not a tolerably correct estimate be made of the probable amount of the saving?—I should think so, by men who know the direction of the winds in those seas.

2530. Mr. *Currie.*] You think that with an auxiliary screw ship, sailing should be the rule and steam the exception?—Undoubtedly; to have plenty of power, and to use it as little as possible.

2531. Admiral *Bowles.*] If they can make with the sails above eight knots an hour, the average rate at which the ship is stipulated to go, the sails should be used entirely?—Yes; then out with the fires at once.

2532. Lord *Naas.*] When a vessel is going by sails at the rate of eight or eight and a half knots an hour, do you think a screw would add to her speed?—Yes.

2533. At what maximum rate of sailing would a screw cease to add to her speed?—We have never been able to ascertain that. Up to the highest speed which I have seen sailing vessels attain we have always been able to add to it by putting on steam power.

2534. Mr. *Bright.*] Is not it to be supposed that if you can sail up to a certain point, it would not be profitable to apply steam; that is to say, that when you are going eight to eight and a half knots an hour, to light your fires and to get your steam up, and run your engine for the sake of an additional half knot or knot an hour, would be rather an unprofitable use of your power?—I think so; but so much must depend upon the nature of the service. If you wanted to catch an enemy in a chase you would not mind what you did, but in a commercial point of view you would not do it.

2535. Mr. *Wilson.*] What is your opinion as to the comparative liability of the screw, as a propelling power, to get out of order under ordinary circumstances, as compared with paddle machinery?—I cannot say exactly what the liabilities of paddles are; I have never been much at sea in paddle-wheel steamers, but I frequently hear of their breaking down, and meeting with ice, and knocking to pieces; I have been in perhaps 200 screw vessels, and I never had the ill luck to

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have an accident with any screw vessel that I have been with yet.

2536. But you have not the means of giving a very decided opinion upon that subject?—No.

2537. Mr. *Divett.*] Have you applied, in your establishment, many direct acting engines to the screw?—About three.

2538. Have you seen them working?—Yes.

2539. Are they very effective?—Very effective indeed.

2540. That principle is well suited to the screw?—Yes.

2541. Is the use of that engine increasing rapidly?—Very much indeed.

2542. The difficulties of applying it to large engines have been overcome?—I think so; but he would be a very bold manufacturer who would have undertaken to make a large engine upon that principle at first.

2543. But you do make them upon that principle now?—There are two of 360 horse each, running in Her Majesty's service, on board the "Encounter" and the "Arrogant" frigates.

2544. Mr. *Corry.*] Was the application of the direct engine first made in the Royal Navy?—Yes.

2545. Mr. *Bright.*] In case of a vessel running aground, has the screw any advantage over the paddle in the attempt to get her off?—I think not materially.

2546. Is not there sometimes deep water where the screw is, and not where the paddle is?—Yes; but there would always be sufficient water under the paddle wheels, although they do not go to the bottom.

2547. Mr. *Cowper.*] Does not the principle of backing the paddle give great advantage to the paddle steamer if it runs aground?—I think the one backs as well as the other.

2548. Do you think the same effect would be produced in a screw steamer by reversing the engine, as in a paddle steamer?—I think so; I have frequently been aground in screw steamers, and backed off.

2549. Mr. *Currie.*] In how much space can a screw steamer turn?—In about twice her own length.

2550. In how much space can a paddle steamer turn?—I think she would require nearly double that.

2551. Mr. *Divett.*] What is the saving of space between a direct acting engine and a beam engine?—I should think less than half, and it is about half the weight.

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2552. Mr. *Berkeley.*] What is the abstraction of speed from the vessel when the screw is cast off and the vessel runs clear?—I have never seen any very decisive experiments tried to ascertain that; some have guessed it at a knot an hour, and some have guessed it at two knots.

2553. A diminution of speed would take place under such circumstances?—To a certain extent, but not so large as it would appear to be; several persons have endeavoured to estimate it at a knot and a half, but on trying the experiment on board the "Amphion," we could scarcely detect any difference, whether the screw was down in the water or whether it was up.

2554. Mr. *Wilson.*] Did it depend upon the wind?—A great deal of pains was taken to ascertain the effect, but we could not distinguish the difference.

2555. Had you at the time a great deal of sail up, and a high wind?—We had.

2556. You would, of course, never dispense with the screw except when you had so fair a wind as would take you almost as fast without it?—Experiments were made to ascertain that point; I think the explanation is, that the screw is following in the eddy of the ship, and does not offer so much resistance as if it were put over the side.

2557. Mr. *Currie.*] Are you acquainted with the experiments which the Americans have been trying upon the screw?—No.

2558. Or the French?—I am not personally acquainted with any of their experiments.

2559. Mr. *Bright.*] Have the English patentees of the screw taken out patents in any other country?—I think not.

2560. You are interested in the screw patent?—Yes.

2561. Is it in the hands of a company now?—Yes.

2562. Are you aware whether the patent extends to any other country?—My patent is extended to America, Belgium, Holland, and Sweden.

2563. Has anything been done with it in America?—They have a great many screw vessels.

2564. Do they pay anything to the patentees in this country?—No, they have not paid us anything.

2565. Are you aware whether patents have been taken out by Americans in their own country for screw steamers?—Several.

Jovis, 15° die Maii, 1851.

MEMBERS PRESENT.

Mr. Divett.	Admiral Bowles.
Mr. Henry Currie.	Mr. Willcox.
Mr. Berkeley.	Mr. Corry.
Mr. Scott.	Mr. Stanley.
Mr. Bright.	Mr. Plowden.
Sir James Hogg.	Lord Naas.
Mr. Cowper.	

VISCOUNT JOCELYN, IN THE CHAIR.

John Yates, Esq., called in; and Examined.

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2566. *Chairman.*] WHAT office do you hold in the Company calling itself the Eastern Steam Navigation Company?—I am the Secretary.

2567. It is the wish of the Committee that you should confine yourself as much as possible in the replies you may give to the questions which may be put to you, to that portion of the project which proposes to connect Singapore with the Australian Colonies. As the Committee desire to take into consideration the question of the Indian line separately and distinctly, after they have finished their inquiries with reference to Australia; will you state to the Committee the route by which you propose to carry out the communication between Singapore and Sydney?—The route we propose from Singapore to Sydney would be *viâ* Batavia, Sourabaya, the Straits of Bally, calling off Swan River, Port Phillip and Sydney.

2568. Have you calculated what the distance would be by that route?—The distance would be about 4,600 miles.

2569. Does that calculation agree with the hydrographer's statement of the distance?—Within a very few miles; I have only taken the round figures.

2570. What time do you calculate that the voyage will occupy, including stoppages?—Including stoppages, it will take 20 days.

2571. Where do you propose to coal?—At Sourabaya, at the Island of Dirk Hatog, and at Port Phillip.

2572. Do you propose to make the return passage by the same route?—Yes.

2573. At

2573. At all periods of the year?—I should say at all periods of the year.

2574. What do you calculate will be the length of time which the communication will take from England to Singapore?—From England to Singapore, *viâ* Plymouth, 37 days; *viâ* Trieste, 33 days.

2575. Making a total from England to Sydney of how much?—*Viâ* Plymouth of 57 days, *viâ* Trieste of 53 days.

2576. What will be the course of the post?—The course of post, allowing three days for answering letters and despatches at Sydney, by the route *viâ* Trieste, would occupy 109 days.

2577. What length of time do you allow for coaling at the different points?—I allow between Singapore and Sydney a total stoppage of two days only.

2578. What are the power and size of the vessels with which you propose to effect the communication between Singapore and Sydney?—Between Singapore and Sydney in vessels of 1,200 tons and 400 horse power.

2579. Paddle-wheel steamers?—Yes, paddle-wheel steamers.

2580. How many changes of vessels will there be between England and Sydney?—Between England and Sydney the first change would be at Alexandria, the second would be at Ceylon; those would be the only changes.

2581. Do you propose that the same vessel should proceed from Ceylon to Sydney?—To Singapore and Sydney.

2582. How do you propose to connect the Australian colonies with India and the Eastern Archipelago?—By another line of packets from Calcutta to Penang, Singapore, Hong Kong, and Shanghai, leaving or taking the passengers to or from Singapore, as circumstances may require.

2583. Will you explain to the Committee the chain of communication which would be established which would bring England, India, and China into communication?—From Singapore to the eastward the vessel will proceed to Hong Kong and Shanghai; to the westward, to Penang and Calcutta. By the line from Singapore, assuming we are travelling from Sydney to England, the vessels would touch at Singapore, thence to Ceylon, where passengers for England would be transhipped into vessels proceeding by the Red Sea, crossing the isthmus to Alexandria, where they would have the choice of two routes, the one by Trieste, and the other by the Mediterranean and Plymouth. With respect to Calcutta and India, the route would be continued from Ceylon to Madras and Calcutta; the main line running from Suez to Ceylon

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Ceylon would be continued on to Madras and Calcutta, the others being, comparatively speaking, branches.

2584. Would the communication from Singapore to Calcutta be *viâ* Ceylon?—No, direct from Singapore to Penang and Calcutta.

2585. You have stated in a former answer the time you calculate it will occupy to run from Singapore to Sydney; what time do you expect the return passage to occupy?—The return passage, we calculate, will be the same; we consider that the power of the vessels we intend to employ will enable us to make the return voyage in the same time.

2586. Have you made allowance for the severe gales off Cape Leeuwin?—We shall have sufficient power to contend with any gales which we may meet with off Cape Leeuwin.

2587. And to keep up the average rate of speed?—Yes, the actual rate of travelling being higher than the average rate we have taken, will allow a sufficient margin for any difficulties we may have to experience off Cape Leeuwin.

2588. What is the average rate you have taken?—Ten and a half knots.

2589. Will you state the comparative advantages which you see in this route over the others?—The comparative advantages of this route over the others, beginning first with the Panama route, would be that it is shorter by at least nine days; then taking the Cape route, it is shorter by 13 days. Another advantage would be, the connecting India, China and the Eastern Archipelago with the Australian colonies, and all those colonies with England and Europe, thereby giving passengers out or home the advantage of personally superintending their commercial transactions along the whole line of route without incurring additional expense; and, lastly, any subsidy given by Government for carrying out this route, will carry with it advantages possessed by no other route yet proposed, inasmuch as it will facilitate and greatly augment the postal communications and commercial intercourse between the most important colonial possessions of the British Crown.

2590. Are you aware of the length of time which is now taken by the Peninsular and Oriental Company in their passage from Southampton to Singapore?—I am.

2591. What is that time?—Forty-six days by the Southampton route. I believe four days less, taking the Marseilles route.

2592. Admiral *Bowles*.] What do you propose charging for first, second, and third-class passengers?—Between Singapore and Australia, for first-class passengers we shall charge

charge about 40 *l.*; for second-class, about 30 *l.*; the third-class will include a variety of other classes, at from 10 *l.* to 15 *l.* Those charges will be exclusive of wine, beer, and spirits; everything else being found.

2593. Will you state what will be the charge for the whole route?—That is rather a delicate subject for me to enter upon; but I apprehend the whole passage from England to Sydney *viâ* Singapore may be effected by judicious arrangements for about 140 *l.* for first-class passengers. The charge for merchandize between Singapore and Sydney would be about 7 *l.* a ton, including measurement goods; the present rate of freight in clipper vessels being from 4 *l.* to 6 *l.* a ton; the duration of their voyage uncertain, the time of sailing from the port equally so.

2594. Can you state what the charge is by the Peninsular and Oriental Company?—Their charge, until recently, was 142 *l.* from England to Singapore, but I believe it now is 135 *l.*

2595. *Chairman.*] What is your calculation as to the length of time which the passage will take from Singapore to China?—Between Sydney and China, having to return by Singapore, the route as far as Singapore would occupy 20 days.

2596. The Committee has had it stated in evidence that the most important trade for Australia, together with China, is that which enables them to communicate with Java and Manilla?—I believe it is so.

2597. Have you any idea how this communication would benefit that trade?—I should think it would very materially benefit it. My experience of course is principally gathered from personal communication with merchants and traders in those particular districts, and from what I have read; but I believe that the development of the trade between the Eastern Archipelago and Australia has been very materially retarded by the absence of steam communication; and it is the general opinion of parties competent to form a judgment, that when steam communication is introduced there, the trade will be doubled or trebled in a very short time.

2598. Do you consider it probable that cargoes shipped at Java and Manilla would be brought down to Singapore, and reshipped there into steamers, for the purpose of being carried to Australia?—I have no doubt they would; and I have no doubt, as Singapore is a great emporium, vessels arriving from every direction will there deposit so much of their cargo as may be intended to be conveyed to Australia by steam.

2599. What character of cargo do you think those steamers will

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will take?—The trade at present between Calcutta and Singapore, and between China and Singapore, for the Australian market, consists of tea, sugar, coffee, silk, piece goods, Cashmere shawls, saltpetre, canvas, cordage in very considerable quantities, hemp, rice, indigo, lacdye, shellac, spirits, cigars, oils, &c. All these are articles which will bear steam rates of freight, and the facility of rapid steam communication will very much increase their consumption.

2600. You believe that those articles would bear the cost of the freight that you propose to charge?—I believe they would.

2601. Do you consider that they are likely to carry sugar and tea in steamers?—Tea they certainly would; but sugar not to so large an extent, as that would generally go more direct from the producer; but there is a considerable quantity sent from Singapore to Sidney, and I believe the uncertainty with which it is now conveyed would throw a very large proportion of that trade into the hands of a steamboat company.

2602. What length of time do you consider the voyage would occupy from Singapore to Hong Kong and to Shanghai?—I have not the exact distances before me at this moment, but I will ascertain them if I may be allowed to do so.

2603. You calculate that that passage may be made at the same rate of speed as you calculate for the other part of the voyage?—I do.

2604. What would be the charge to a passenger for that portion of the route?—It would be the same relative proportion for the mileage as on the other route; mile for mile on either route, as near as possible.

2605. Mr. *Divett.*] You have stated that you propose to pass by Sourabaya; have you calculated the difference of distance passing by the Straits of Sunda and the Straits of Lombock to Swan River?—I have not gone particularly into a calculation as to the distance; but I have taken the route by Sourabaya as being a desirable commercial route between Singapore and Sydney, there being a considerable amount of trade between Batavia, Sourabaya and Australia; and though it may be, and I have no doubt it is, a little longer in point of distance, you will have the advantage of a quiet sea, and afford to Australia the means of direct intercourse with Sourabaya and Batavia, which would more than compensate for the digression in point of distance.

2606. Do you think that there is any great difference in the quietness of the sea, in passing by the Straits of Lombock to the Island of Dirk Hatog, and by the Straits of Sunda to the

the Island of Dirk Hatog?—I should think, though I am not much of a sailor myself, that making the passage furthest to the west would probably be most favourable. But I do not think, with the vessels of the power we propose, that any seas we should have to contend with would very materially retard our progress; therefore though it might not be quite so favourable to go out by the eastern passage as by the western, although by the latter we should be much farther to windward, I see no insuperable objection to the eastern passage.

2607. You have not calculated the difference in point of distance?—No.

2608. Do you suppose the difference of distance would lead to the difference of a day in the time of making the passage?—I do not think the difference would be anything like a day; I have not turned my attention to that point, but I should think it would not make a difference of many hours.

2609. You propose to go from Singapore to Sydney in 20 days?—We do.

2610. You do not propose to accommodate Adelaide at all, do you?—I think a deviation from the track which a steamer ought ordinarily to take from Cape Leeuwin to Sydney, to enable her to call at Adelaide, would tend materially to lengthen the voyage; therefore what I should propose would be that there should be an auxiliary vessel, or rather that an intercolonial communication should be made between Port Phillip and Adelaide, so as not to take the main vessel out of its direct course.

2611. You would take the direct line to Port Phillip, and then to Sydney?—Yes.

2612. And communicate with Adelaide by a branch from Port Phillip?—Yes.

2613. You spoke of the development of the commerce between the Australian colonies and India; are you aware that the extent of commerce between Adelaide and India is far greater than that between any other of the Australian colonies and India at this moment?—I am not aware of that fact, of my own knowledge; but I am led to infer as much from the evidence I have heard in this room.

2614. Have you reason to think that that mode of communicating with Adelaide would be satisfactory to the people of Adelaide?—Perhaps it would be difficult to devise any scheme which would give perfect satisfaction to all the colonies, because I believe there is a very considerable amount of jealousy between them; but I think the greatest amount of advantage

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advantage to the whole should be the object of the establishment of any steam communication, and I believe that object would be best attained by making the line in the way I propose; that is, by taking Port Phillip as the nearest point to be made towards Adelaide.

2615. Would not that plan be the means of giving an earlier communication to Sydney by one day, at the expense of making it four days later to Adelaide?—I think not; I am not precisely informed of the geographical distance between Port Phillip and Adelaide, but I think an intercolonial steamer between Adelaide and Port Phillip would make the passage in about same time that it would take the main steamer to go from Port Phillip to Sydney.

2616. You would pass Adelaide, go to Port Phillip, and would then come back to Adelaide again to meet the return steamer?—Not exactly so. Adelaide being in the Upper Horn of the Gulf of Australia, I apprehend it would take a vessel a long way out of the direct passage to make Adelaide first.

2617. Are you sufficiently acquainted with those seas to induce you to believe that there would be any great saving of time in taking that distant passage, which of course would be necessary to a screw steamer, but would not be necessary to a paddle-wheel steamer?—I am not; but I think a paddle-wheel steamer would make her passage from Cape Leeuwin to Port Phillip as nearly direct as the parallel is drawn upon the map. But I think that might not be the case with a screw steamer.

2618. Are you prepared to give the two distances of the direct route from King George's Sound to Port Phillip, and from the same point passing by Adelaide?—I am not at this moment; I shall be happy to supply the distances.

2619. Your company originally intended to go by Torres Straits to Sydney, did not it?—We did.

2620. Is not it the fact that on the representation of some scientific gentlemen whom you believed you could depend on, you made up your minds that the communication from Singapore to Sydney could be made with advantage and convenience through Torres Straits?—It was so.

2621. Subsequently the same individuals who induced you to adopt those views have expressed views which have entirely altered the opinion of your company?—So far as relates to that portion of the voyage which we should have made through Torres Straits.

2622. Therefore now you have made up your minds that the

the passage through Torres Straits will not be expedient either as to time or as to speed?—I should rather qualify my answer to this question, inasmuch as having for the last six years bent my mind to the subject of passing through Torres Straits, and having, until I heard the evidence given in this room, quite satisfied myself that Torres Straits was the route by which steam should first be introduced to Australia, I must confess that it is with some degree of reluctance that I am obliged to give up that opinion, and to come to the opinion that it is necessary to abandon the Torres Straits route by taking the western passage. At the same time I may add that originally, when the route was designed to pass through Torres Straits, it was intended to employ vessels of a much smaller class than would be necessary for going round Cape Leeuwin. We intended to perform the service in vessels of 600 tons and 200-horse power; but they would be a class of vessel wholly inapplicable to the western seas, quite apart from any alarm about Cape Leeuwin; now we propose to have vessels of 1,200 tons, and 400-horse power.

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2623. Is it your belief that you could have passed through Torres Straits with vessels of that size more safely than with larger steamers?—There might possibly be a little more safety with the smaller class of vessels, but I do not think there is any great degree of difference.

2624. You do not consider the question of safety as involved in that passage, so much as the question of power with reference to the winds you would have to encounter?—I conceive that the winds we should have had to encounter through Torres Straits would as easily have been overcome with vessels of the power we originally intended, namely, 600 tons and 200-horse power, as those we should have to encounter by the western passage would be with vessels of 1,200 tons and 400-horse power; we saw no insuperable objection in point of safety.

2625. At the present moment both yourself and the company with which you are connected, have given up all thoughts of passing through Torres Straits?—I believe I may say we have.

2626. Is the company definitively formed?—It is as definitively formed as it can be till Her Majesty's final sanction to the Charter of Incorporation takes place.

2627. The company is about to be incorporated by charter?—The charter has passed the Privy Council.

2628. The capital is subscribed, is not it?—It is.

2629. Is any great amount of it paid up?—Till we have the

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the charter of incorporation on the table we cannot make the first call; the preliminary deposits are paid up upon all the shares allotted.

2630. What is the number of shares?—The number of shares allotted is 49,000; that is, in England. The number of shares appropriated for India, all of which I believe are already, or will be, taken, is 6,000; that will make 55,000 shares, and 5,000 shares have been reserved for special purposes.

2631. *Chairman.*] Are those shares all taken?—I believe they are all taken.

2632. Mr. *Divett.*] What deposit has been paid upon those shares?—The extent to which we are permitted to go under the Joint Stock Act of Parliament is only two shillings a share.

2633. Mr. *Willcox.*] I presume those deposits are for the preliminary expenses?—No, they are not for the preliminary expenses.

2634. In your prospectus, do not you state that this deposit of 2 *s.* a share is to go for preliminary expenses, and to be returned in case the company should not be established, deducting the preliminary expenses?—It is not subscribed for preliminary expenses; it is subscribed as part and parcel of the capital of the company; but in the event of the company not going on, the 2 *s.* so subscribed would be liable to the payment of any preliminary expenses which might be incurred.

2635. Mr. *Divett.*] What capital do you think will be required for this service?—The capital of the company is 1,200,000 *l.* in 60,000 shares of 20 *l.* each.

2636. What number of steamers do you think it will be necessary to use for carrying on the service throughout to the whole line which you have referred to?—The total number would be 15.

2637. Will you have the goodness to give the Committee the amount of horse power of those different steamers?—Between Plymouth and Alexandria there will be three of 1,500 tons, and 500-horse power; between Suez and Calcutta there will be four vessels of 2,100 tons, and 600-horse power; between Ceylon, Singapore, Batavia, Sourabaya and Sydney there will be four of 1,200 tons and 400-horse power; and between Calcutta, Penang, Singapore, Hong Kong and Shanghai there will be four of the same description.

2638. All that you propose to effect by a capital of 1,200,000 *l.*?—Yes.

2639. Do you consider that a capital of 1,200,000 *l.* would be

be sufficient, or do you take certain powers of borrowing beyond that amount?—In answer to the first part of the question, I say 1,200,000 *l.* is amply sufficient, but in the event of its becoming necessary to extend the operations of the company, power has been taken to borrow.

2640. Within what period of time do you suppose the company would be in a condition, after they obtained their charter, to carry out the whole of this service?—Within 18 or 20 months; 20 months would be the outside.

2641. In what length of time do you think they would be prepared to carry out the service between Singapore and Sydney?—Between Singapore and Sydney, if it were desirable at a very early period, by temporary vessels; but if it were not considered desirable to employ temporary vessels, then within 12 months from the date of signing the contract we should be in a position to carry out that portion of the service.

2642. Having to prepare vessels for that special service, you think it might be done in 12 months?—Yes.

2643. But you think the company would be in a condition to do it in a much shorter time with temporary vessels?—Yes.

2644. In what length of time?—In less than one half the time.

2645. In six months from the present time you think you would have vessels on that station to carry out the service between Singapore and Sydney?—I do.

2646. You have stated that the time which would be occupied between Plymouth and Sydney, by sea, will be 57 days, and that the passage by Trieste will take 53 days?—Yes.

2647. In comparing that calculation with the time now occupied, in what way will you gain in point of time?—We shall leave London four days later by Trieste than we shall taking the course by Plymouth.

2648. Have you made calculations which induce you to believe that that service would be efficiently carried out?—Yes; a mail leaving London, say on the 1st day of January, *viâ* Plymouth, and one leaving on the 5th by Trieste, would meet at the same time at Alexandria.

2649. Mr. *Currie.*] You said you would make the passage to Sydney in 57 days?—Yes.

2650. And you said that that would be 13 days shorter than by the Cape?—It is 13 days less than by the Cape.

2651. How do you make that out?—The average passage by the Cape, according to the evidence given in this room by

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Captain Fitzroy, is 13 days longer than it will be by Singapore.

2652. Are you aware how many days the Screw Company offer to perform that passage in?—I have seen the printed letter, but I am taking my position from the evidence of one of the directors of the company, Captain Fitzroy.

2653. There is a proposal by the company itself to do it in a certain number of days?—Yes; but allowing the rate of speed which the Screw Company claim for their vessels, there would be a difference of 13 days.

2654. You assume that your calculation is correct, and that the calculation of the Screw Company is incorrect; do not the Screw Company offer to do it in 64 days?—Sixty-four days out, and 68 days home.

2655. They offer to go out in 64 days, according to their printed proposal, do they not?—Yes.

2656. You say you will go to Sydney in 57?—Yes.

2657. What will be the difference between 57 and 64?—It will be seven days.

2658. You spoke of a difference of 13 days?—I was speaking of the course of the post.

2659. You say you will go at the rate of 10 ½ knots all the way?—Yes.

2660. Do you mean all the way from England?—The whole voyage will be maintained at that rate.

2661. Do you think you can maintain, under all circumstances, a speed of 10 ½ knots from Suez to Point de Galle?—I do.

2662. Mr. *Willcox.*] Are not you aware that such an average has never been reached yet by any steam-vessels of that power?—I am aware that Cunard's transatlantic vessels obtain that speed.

2663. Do they average that speed?—They do.

2664. With what horse power?—I have not made a comparative statement of their horse power; they have vessels of various power; 400-horse power, 600-horse power, and 800-horse power.

2665. Are you aware that the cost of coal upon that line is very small?—Yes.

2666. But the case is quite otherwise in India and China?—Of course it is.

2667. What do you suppose the cost of coal in the India and China Seas, actually put on board the steamers, will be?—My calculations for the Indian Seas are about 50 *s.* a ton.

2668. *Chairman.*] At Singapore?—In the Indian Seas, and

and not at Singapore. I am not now speaking of the Australian portion of the route. *J. Yates, Esq.* 15 May 1851.

2669. Mr. *Willcox.*] I presume you have made your calculations throughout, including everything?—I have.

2670. Probably you would not wish to produce them to the Committee?—I am not prepared to say whether I would or would not at this moment.

2671. Were not you formerly the secretary of the Indian and Australian Steam Navigation Company?—Yes.

2672. In what year was that company formed?—It was incorporated, I think, in 1847.

2673. In 1848, did not you, on behalf of that company, tender for the conveyance of the mails between England and Australia?—I did.

2674. And also to Alexandria?—I did.

2675. Did the Government accept those tenders?—They did in both cases.

2676. Did the company carry them out?—They did not.

2677. For what reason; was not it from the want of capital?—Not exactly so.

2678. What capital did you raise?—£. 250,000; we had subscribers to that amount.

2679. How much actual money did you raise?—I think the preliminary deposits were something like 4,000 *l.*; I am speaking without reference to the books and papers.

2680. What has become of that company?—That company is so far defunct that its affairs are being wound up.

2681. Under the Winding-up Act?—Yes.

2682. Your present company, I understand, have not made a single call?—We have not.

2683. It is possible, is not it, as in the case of the Australian Company, that the call when made may not be answered?—It is possible, but not very probable.

2684. In your opinion?—In my opinion, and in the opinion of all the parties connected with it.

2685. Mr. *Bright.*] Was it in the year 1847 that the other company of which mention has been made did not succeed?—It was, and in 1849 the company was wound up.

2686. When was the company formed?—In 1846.

2687. Was it in 1846 or 1847 that the money was being subscribed?—It was subscribed in the latter part of 1846 and the early part of 1847. The same difficulty presented itself to that company which does to all other companies seeking a charter of incorporation; they cannot make a call till the charter of incorporation is on the table.

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2688. Did you succeed in getting that charter of incorporation?—We did, and we succeeded in making a call, which was partially responded to.

2689. In what month of 1847 did you obtain the charter?—I think about the month of August.

2690. Was there anything peculiar in the state of the money market in the year 1847 which operated unfavourably upon your obtaining your capital?—There was everything unfavourable at that time. The awful commercial crisis, and the Indian panic occurred, which deprived us of the support of a great many valued friends; that took place immediately upon the charter of incorporation being obtained.

2691. Is it your opinion that the state of monetary affairs in that year was the principal cause of your want of success?—It is.

2692. Do those reasons now operate at all?—They do not.

2693. You have stated that the amount of the capital of the present company is 1,200,000 *l.*, and you thought that that would be amply sufficient; will you give the Committee your estimate of the cost of building those vessels. Take first the three of 1,500 tons and 500-horse power; what will be the cost of each of those?—I will furnish the Committee with those particulars; I have not them with me at the moment.

2694. Can you tell the Committee what is the estimated cost for the whole 15 ships?—The whole cost, including coaling stations and every contingency, is within the capital of 1,200,000 *l.* The particulars which I am now asked for I can supply, and will do so with pleasure.

2695. Can you state whether the first cost of the 15 ships will be more than 1,000,000 *l.*?—I think as near as possible about that sum; and I have a margin of 150,000 *l.* beyond the estimated cost of ships for coal hulks, and other appliances.

2696. Have you taken into your calculation any capital for carrying on the business of the company, what may be called floating capital?—I have done so.

2697. Do you state to the Committee that it is your opinion and the opinion of the Board of Directors that the capital which has been put down is sufficient for this service, and to supply the number of ships of the size which you have described?—I do most unequivocally.

2698. Mr. *Berkeley*.] You were asked whether the company had made a call, and you stated that it was impossible to do

do so at present?—We are not in a position to make a call until we have the charter of incorporation in our possession.

2699. As regards the comparative advantages of the passage to Adelaide or Sydney, would it be of much consequence to the company whether they went to Adelaide or to Sydney?—If it were the wish of Her Majesty's Government that we should call at Adelaide, it would be readily included; I have not stated any objection to calling at Adelaide, except that I think the service to Adelaide might be conducted by an intercolonial steamer from Port Phillip, which would in effect put Adelaide and Sydney upon a par. But if the trade of Adelaide be so important that it is considered necessary to have a main line of communication, there would be no difficulty in calling there.

2700. Mr. *Divett*.] You have stated that you have no doubt that the capital when called for will be paid?—I have the greatest possible assurance that the capital will be paid when required; and I believe that arrangements have been made by which it will be forthcoming the moment it is called for.

2701. One of the companies which has been before the Committee has given a list of its proprietors, would your company have any objection to furnish the same?—I am not prepared to say that any objection would be made; I have not authority at this moment to give it.

2702. In what year was the other company you have spoken of first formed?—I think in 1846; the company was incorporated in 1847.

2703. In what year was it that you first tendered for the performance of this service?—I think it was late in the autumn of 1847, or the early part of 1848.

2704. You were not able to perform that service as proposed?—We did not undertake that service; not from any inability to undertake it, but from some disagreement which arose on the road to its performance.

2705–13. Did not you at one period ask for some additional time from the Government?—Yes.

2714. Mr. *Berkeley*.] Is your company ready to give security for the performance of the contract?—To any amount.

2715. To perform the passage at a speed of 10½ knots an hour?—Yes.

2716. You select paddle-wheel steamers?—Yes.

2717. What is your reason for doing so?—Because they are of known tried power and efficiency; the experience which the world has had of paddle-wheel steamers is so far superior

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to that of any other means of propulsion, that at present whatever may be the result of the screw, of which I am not an opponent by any means, I believe it cannot be depended on with the same degree of certainty that a paddle-wheel vessel can.

2718. Mr. *Divett.*] There are some gentlemen of scientific experience connected with your company, are not there?—Yes.

2719. Have you had any discussion as to the different merits of iron and wooden steamers?—We have had incidentally discussions of that kind, but the Admiralty having declared their determination to contract only for wooden vessels, we have scarcely ventured to look at iron for the purpose.

2720. You have contemplated performing the service you propose with wooden vessels?—Yes.

2721. Mr. *Berkeley.*] What is your opinion with respect to the use of auxiliary power for carrying on the Royal Mail Service?—I speak with great diffidence, not being either a sailor or an engineer; but my opinion decidedly is, that auxiliary power cannot be depended on for postal communication.

2722. Full power, you think, must be adopted for postal communication, whether by the screw or by the paddle?—Certainly full power; I think it possible, though I believe it has yet to be tested in earnest, that a screw vessel, with power for power, may make her voyage as fast as a paddle-wheel steamer.

2723. Are you aware whether, in those paddle-wheel steamers, they use what is called Mr. Morgan's invention?—I believe the invention is generally adopted by the most approved engine makers, and I believe it has been pre-eminently successful. I was asked just now whether the Indian and Australian Steam Navigation Company had not entered into two contracts. I have only explained the circumstances of one of them. The Government accepted our tender for the Australian service between Singapore and Sydney. I will explain why that contract was not carried out. Our tender was for 26,000 *l.* a year for steamers of 600 tons and 200-horse power. Government accepted that tender for 26,000 *l.* a year; it was to include all colonial grants of any description whatever; we were simply to receive from the Imperial Treasury 26,000 *l.* a year. Upon that understanding, which was communicated to us in writing, we proceeded to a settlement of the draft of the contract, and should have proceeded to the signing and executing it, but when we came to the more serious portion of the question, we found that the

the contract with Her Majesty's Government here was to be limited to 20,000 *l.* a year, and that we were to get the remaining 6,000 *l.* a year from the colonies as we best could. These were the expressions used at the time. Whereupon I was referred, by the Lords of the Admiralty, to Lord Grey, to ascertain how far his Lordship could guarantee the 6,000 *l.* a year placed at his disposal by the colonies for three years, for the further term of four years. His Lordship very prudently, and in my humble judgment very properly, said that he could guarantee to the extent of three years, but certainly not for the remaining four, without first consulting the authorities in Australia. Therefore virtually, as the contract stood, we should have had, instead of 26,000 *l.* a year for seven years, 26,000 *l.* a year for three of the seven years; and 20,000 *l.* a year for the remaining four years. The consequence was, upon my making that representation to the Court of Directors, they at once said, "This is an insurmountable difficulty, which we see no possibility of getting over; it will hang us up for twelve months to get any communication with Australia;" and the result was, that they determined to abandon the whole scheme, and gave up the contract. Various representations have been made as to the causes which led to the abandonment of that contract, and I have thought it to be my duty, in justice to my late colleagues, to state that those were the facts. I do not impute blame to any of the parties, because I believe all were honestly and fairly disposed in the matter, but it ended in that lamentable result, the breaking up of the company, and hence has arisen the delay in carrying out steam communication with Australia.

2724. Mr. *Corry*.] You have stated that your company are ready to give security to perform the voyage at the average rate of 10½ knots an hour?—Yes.

2725. At what do you estimate the average rate of speed of your vessels in fine weather?—Very considerably beyond 10½ knots.

2726. Can you say how much beyond?—I am scarcely prepared to say how much. I am told by men competent to form an opinion, that 10½ knots is by far too modest a calculation. I apprehend we may attain a speed of 14 knots.

2727. Do you mean in vessels of 1,200 tons and 400-horse power?—Yes.

2728. Do you know whether any vessels of that size and power have been made which have given such satisfactory results?—I think they have.

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2729. Can you specify any?—I think I can supply the Committee with the names of vessels which have done so.

2730. Mr. *Currie*.] When you said that the company would give security, did you mean the security of 2*s*. a share, or their present security?—I mean security to any amount, from 1,000*l*. to 100,000*l*., if necessary.

2731. Mr. *Willcox*.] Though there was a panic in the money market in 1847, do you mean to say that that existed in 1848, when you took this tender, and had 12 months before you for carrying it out?—The effect of that panic caused the withdrawal of a number of highly respectable men from the patronage of the company, and the consequence was that the weaker having been left as it were by the supposed stronger men, they felt some hesitation in going on; the failure did not arise from the causes to which it has been attributed; we had the means of carrying it on, in fact.

2732. The gaps left by the parties you allude to, you were unable to fill up?—We did not try to fill them up.

2733. Mr. *Berkeley*.] Several questions have been put to you touching the failure of a certain company; that is not the present company, is it?—It has not the slightest connexion with it.

2734. It was not composed of the same persons as the present?—It was not composed of any of the same persons, except myself.

2735. It has nothing to do with it whatever?—Nothing whatever.

2736. Mr. *Willcox*.] You have given the Committee some strong assurances of the ability of your company to carry out any contract they may undertake?—I have.

2737. Were not the same assurances repeatedly given with regard to the Indian and Australian Company, both to the Admiralty and to the Colonial Office?—Not in the same way in which I am now giving the Committee assurances; assurances were given to the Admiralty of a qualified nature. We were asked privately by the Admiralty who were the parties connected with the scheme; the names of those parties were submitted to their Lordships, and I believe were satisfactory: the parties whose names were submitted to the Admiralty continued in the company, and continue in the company at the present moment.

2738. Were the signatures of those parties given, or merely their names?—I could have given the signatures.

2739. The names only were given?—The names only.

2740. Was the number of shares subscribed for attached to each

each name?—I do not remember; but they could and would have been attached had it been required, or if there had been any question asked with respect to them.

2741. Are you not aware that there is an official correspondence between the proposed Indian and Australian Company, and the Government, containing those assurances of their being able to carry out the scheme?—I have this correspondence at the moment before me.

2742. Are there those assurances contained in it?—Yes, the qualified assurances: I now give you an unqualified assurance that the company I have the honour to represent is capable of carrying out any service it may undertake, and of giving the most undoubted security for the performance of that service.

2743. And those assurances you did not give before with respect to the Indian and Australian Company?—Only qualified assurances were given.

2744. In what way were they qualified?—At this moment, without reference to the correspondence, I cannot say. The Indian and Australian Company was called into existence to carry out an object for the Government; the Government gave us, morally speaking, an assurance that when we were in a position to undertake a contract, we should have one, but when the time arrived for obtaining a contract we found that from circumstances over which we had no control, the Government had changed their opinion, and that if we did get any contract it must be by competition; the competition proceeding from the Peninsular and Oriental Company; we made the lowest tender, and were in a position to carry it out, and had not the circumstances arisen which I have already narrated, we should have carried it out.

Captain *Christopher Claxton*, R. N., called in; and Examined.

2745. *Chairman.*] WHAT rank do you hold in Her Majesty's service?—I am commander.

2746. Are you not one of the originators of the long voyage steamers?—Yes, I was one of the parties who got up the building of the "Great Western."

2747. And the "Great Britain"?—And the "Great Britain," subsequently; I was managing director of the company.

2748. Were you not examined by the Committee in 1846 on Mail Contracts?—I was examined by the Committee on Mail Contracts to the United States.

2749. Were not you interested in a plan for carrying emigrants

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grants and mails to Australia in vessels of the size of the "Great Britain" some time ago?—Yes, when we found we could not get Mr. Cunard's third or fourth contract ourselves, we began to think, supposing we took the "Great Britain" off the New York Line, which we had originated, what we should do with her. We then turned our attention to a line to Sydney, running her as an emigrant ship only, with the view of adding some other ships of the same size to carry out a large number of emigrants, from 800 to 1,000. I think we should have adopted that scheme, but at that time she ran ashore in Dundrum Bay. The Chancellor of the Exchequer had taken our case so far into consideration as to promise, after the service was completed, to give us the same amount of remuneration per voyage as Cunard's vessels were to have for going to New York. The scheme went off, but I made calculations upon the subject.

2750. Having considered that question, your attention was no doubt drawn to the general subject of steam communication to Australia?—It was.

2751. The "Great Britain" was a steamer which was propelled by a screw, was not it?—Yes.

2752. Can you state to the Committee her tonnage?—Her tonnage was a little above 3,500 tons; her power was nominally 1,000 horse; that is what we calculate the power ought to be.

2753. That was the primary motive power?—We never worked up to that; the boilers were deficient; she came very near it in the voyage she was wrecked on, after some alteration of the boilers. I believe she was worked very nearly up to that power when she ran ashore in Dundrum Bay.

2754. Mr. *Bright*.] Do you found your calculation entirely on the area of the cylinder in stating the power, or upon the pressure at which you work?—What the indicator gives is what we form our calculation of the power on, when we try it. We give the diameter of the cylinder and the length of the stroke in proportion to that power which we decide to have; it does not turn out to be that power always; it depends upon the boiler what the power will be, and so far it is an indefinite term. Watt gives what he calls the horse power as raising 10 cwt. 33 feet in a minute, or 33,000 pounds weight one foot high in a minute. I do not think now in contracting with an engine-maker that persons trouble themselves much about the power; they say we have a vessel of so many tons, and you must make the engine to give us so much speed; you leave it to them

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them how they will do it, after defining the form and dimensions of the ship.

2755. It is more a matter of practice among engineers than of strict and rigid definition?—Yes; there is so much competition among engineers at this moment for making marine engines, that if you agree with one engineer for a particular power, another man will take your contract on the same terms, and give you an engine of still greater power; he will add an inch or so to beat his neighbour; so that when you get an engine called 200-horse power, it is very often really even more than 300-horse power; it does not cost any more.

2756. *Chairman.*] It will require more coals to work it, will not it?—An engine ordinarily worked at seven pounds pressure, if it is driven up to 14 pounds pressure will certainly take more fuel, because persons who will do that sort of thing will not mind wasting fuel; but it is not an economical plan. A much more economical plan is to have an engine of 400-horse power to do the work of 300-horse power, rather than an engine of 200-horse power to work up to 300-horse power, because you can cut off your steam or use your steam, as you please.

2757. At what proportion of power to tonnage do you consider the screw becomes an auxiliary power?—After you reach three tons to one-horse power.

2758. If you have a vessel of one-horse power to four tons you would consider that an auxiliary screw vessel?—Certainly.

2759. Have you looked at the proposals which have been made by the Screw Company for carrying out the communication between this country and Australia?—Yes, I heard some of the evidence the last day; that is all I know about it. I am totally unacquainted with the Indian seas; my experience has been in the Atlantic and South America principally,

2760. Have you heard that for the purpose of carrying out this communication they propose two classes of vessels; the first-class vessels of 1,400 tons with 250-horse power, the second-class being vessels of 1,700 tons with 300-horse power; they have stated to the Committee that they consider that with vessels of that power in proportion to the tonnage they will be able to maintain a speed of 8½ knots an hour upon the whole passage. Do you consider that such vessels will be capable of so doing?—It is a large average for that amount of tonnage; it depends upon the sea and upon the weather a great deal. We could do nothing of that kind in the "Great Western"; at least we could not do more than that when her power was 400-horse to 1,350 tons. Working up to that power the vessel did

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did not go beyond that speed; we could not make more than an average of eight nautical miles an hour. We had not power sufficient for our purpose against the westerly gales of the Atlantic; we were the first that tried it.

2761. Are you aware that gales are said to prevail for nine months of the year off the coast of Australia, of great strength and violence?—I have heard it.

2762. You are acquainted with the passage from Liverpool to New York?—Perfectly.

2763. Do you believe that for a distance of 3,000 miles, in a portion of which, extending for 600 miles, such gales are likely to be encountered, a vessel would be able to maintain an average speed of 8½ knots an hour?—I should say certainly not. Speaking from my own experience, I should say the most they would get out of her in the finest weather would be 8½ knots, steaming alone.

2764. The Committee have it in evidence that a screw steamer would make use of her sails, and not go direct head to wind, but beat the passage taking advantage of the sails, as well as the screw?—I consider that that is the only way an auxiliary screw steamer can make a passage at all against a foul wind. I consider that in order to make a tolerable passage, and make her coals last, that would be the only way in which she could proceed.

2765. With an auxiliary screw working in such a manner, you do not think that for a distance of 3,000 miles, during 600 miles of which a vessel was liable to meet with such severe gales, she could maintain a speed of 8½ knots an hour?—She would go 6,000 miles through the water to get 3,000 miles under such circumstances. We have frequently had strong winds, more or less, from the time we started till the time we arrived at New York. If an auxiliary screw vessel had had at that time to make the passage, she would have had to work within four and a half of five points or the wind, which I know they can do, and to beat the whole way to windward. But to do that she must have made a series of traverses, which would have doubled her distance, so that she would have gone through the water about 6,000 miles, in order to get 3,000 on end under those circumstances.

2767. You are now calculating that she has a head wind, and is encountering those gales for the whole 3,000 miles?—Yes.

2766. The evidence the Committee has received is to this effect, that for a portion of the line only a vessel is liable to those gales, while for the rest of the line, to the extent of nearly

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nearly two-thirds, there would be a favourable wind in which a vessel under sail would be able to go nine knots an hour?—And give up steaming altogether. I heard it stated that she was to feather the screw. If the vessel is so large a vessel as I have been in the habit of dealing with, or anything beyond 1,600 or 1,700 tons, I apprehend the screw would be so heavy and large that it would be dangerous often to submit it to any feathering or lifting experiment whatever; I think you could not do with a large screw what you could do in a small vessel with a light screw. Then if that vessel is to sail, and to put out her fires, she must disconnect her screw, and let it revolve of itself, according to the speed through the water; in so doing, I know from experience that the screw will stop your way one knot in six. Therefore the answer I should make to the question would depend upon the size of the vessel. I know that that average can only be brought up by sailing with a fair wind; and I know, for I have done it in the "Archimedes," which was a vessel I had under my control for six months, that by letting go the screw, and with a fair wind, you may do eight and a half knots an hour. She would have gone nine and a half knots, if we could have feathered the screw at that time. It is only the two-armed screw which can be feathered. The screw in the Great Britain was a four-armed screw. I know very well that such a vessel can do as well as a sailing ship, barring any impediment from the screw stopping her way. If you go nine knots, or 10 knots, I think a little power would keep the screw going at the same rate, it being of little or no use to the vessel. I should not, under those circumstances, put the fire out in my ship if I had a large screw; I should keep up just steam enough to keep the screw at the speed of the vessel.

2768. Mr. *Bright*.] Did you hear the evidence of Mr. Smith with regard to the facility with which the screw could be lifted out of the water, and put back again into its place?—Yes.

2769. Have you had sufficient experience yourself with regard to large vessels and heavy screws to enable you to contradict the statements which he made?—I am not contradicting the statements which he made; he made a statement with respect to large men-of-war, in which he said the screw was lifted. I think he said those were adapted for lifting, but that in a fine-stern vessel the screw was not so well adapted. The screws in those vessels are very auxiliary indeed. I have been on board the "Hogue;" I have seen her screw at work, and I have seen the apparatus for lifting it.

2770. Is

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2770. Is there any difficulty in that vessel in lifting the screw?—Mr. Smith said it took 15 minutes; that was about the time they told me on board it took; but looking at the "Hogue," at her stern and breadth of beam, and the power she has to do a work of that kind, it is very different from the case of a vessel with a fine stern, which a screw vessel ought to be. I think lifting a heavy screw would be a very serious thing. I am sure we could not do it in the "Great Britain," and she is 1,000 or 500 tons larger than the "Hogue"; very serious in very bad weather.

2771. Mr. *Plowden.*] Do you think it would be dangerous?—Her stern is exceedingly fine, the stern of the "Hogue" being square comparatively in her tuck; the screw would be easily lifted and put out of sight in the "Hogue," but not in the "Great Britain."

2772. I understood you to say that a square-stern ship was more strongly built, and better fitted for elevating the screw, than a ship with a fine stern. Is not a fine-stern ship generally considered stronger in her build than a square-stern ship?—Not for that purpose; because if you ran her away to what we call stem and stern alike, there would be no place to put the screw except up in the air. In the "Hogue," I suppose, from her deck down to her waterline, must be 20 feet and more. In the "Great Britain" it is not when deep more than 12 feet; therefore with an 18-feet screw, we must have it a good way up the mizenmast almost.

2773. Mr. *Bright.*] With regard to the "Great Britain," should you argue conclusively that what you have not been able to do in her you are not able to do in other ships; have there been no improvements introduced since she was built?—Yes; there have been some improvements since she was built; though she is going to sea without any of them. I apprehend that it is very easy to do all those things in a small vessel with a light screw, but I am speaking of a very heavy screw with a large ship of 1,800 tons.

2774. Mr. *Corry.*] Have you ever seen the "Arrogant," one of the war steam frigates?—Never.

2775. Are you aware what her power is?—No.

2776. Mr. *Bright.*] Will you tell the Committee what difference there is between the "Hogue" and the "Great Britain" in respect of the distance from the engine to the screw; is the shaft much longer or much heavier in the one case than in the other?—I believe the engines of the "Hogue" are very nearly aft; in the "Great Britain" they were in the middle of her, and as she is about 300 feet keel, the shaft in

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in the "Great Britain" must be 120 feet long; in the "Hogue" I suppose it is not 60 feet long; I do not exactly recollect the length, but I suppose that to be the case.

2777. The extreme length of that screw shaft would make it necessary to have it so much stronger and heavier?—Of course the longer the shaft is the stronger you must take care it shall be, to guard against twisting; the shorter shaft need not be half the strength of the longer one.

2778. In the boats which have been proposed for the Cape route, would not that difficulty with respect to the length and the enormous weight of the shaft in the "Great Britain" be avoided?—I do not know where they propose to put their engines; the first screw ship which was built was a vessel called the "Great Northern," about 1,700 tons; they put her engines directly aft.

2779. If you are not acquainted with the facts, and do not know what they propose to do, you would not lead the Committee to conclude that because you have not done something on board the "Great Britain" it could not be done on board these ships?—Not the least in the world; I believe all those improvements are being made, but if they come to use large screws, I do not believe they can either lift them in all weathers or conveniently feather them.

2780. Can you cite any positive facts, or have you had any experience which proves that statement, or do you merely anticipate that the difficulties will be such as not easily to be overcome?—I am not sufficiently informed as to the modern improvements to speak positively upon that point; I only wish to give an idea of the difficulty of managing a large screw compared with the ease of managing a small one; if the vessels have very small screws, I see no difficulty in their adopting the modern improvements.

2781. Mr. *Cowper.*] Are you aware of the weight of the largest screws which have been raised in the frigates lately built in Her Majesty's Navy?—I think I have heard that five tons is about the largest.

2782. Do you anticipate that the screw of these vessels will be of greater weight than that?—Not with 200 or 250-horse power.

2783. Lord *Naas.*] Suppose a vessel of 1,700 tons, propelled by an auxiliary screw of 300-horse power, what do you imagine would be the weight of her screw?—I suppose it would be four or five tons.

2784. Do you think that it would be impossible to lift that with any degree of certainty?—No, certainly not; I was speaking

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speaking of screws of eight or nine, or 10 tons, which I think ought to be put into such large vessels.

2785. In vessels such as are proposed by the Screw Company to carry the mail by the Cape of Good Hope, you do not think there would be any difficulty in lifting the screw?—I think I heard from some of the witnesses that they proposed feathering the screw, and not lifting it.

2786. In case of their proposing to lift it, would there be any difficulty?—It would depend a good deal upon the weather.

2787. Mr. *Divett.*] From the commencement of the long sea voyages by steam vessels you have given great attention, both scientific and practical, to the whole subject, have not you?—It has been a subject to which, till the "Great Britain" came off Dundrum Bay, I had devoted almost my whole time.

2788. What is the result of your experience at this moment as to the relative advantages of the screw and the paddle, with equal power?—I must qualify my answer to that question by saying that the efficiency of the screw depends, in my opinion, upon whether you have sufficient depth of water for the screw. A screw vessel must draw a great deal of water; if you have plenty of water, and there is no question about shoal water (for you may have a paddle-wheel vessel to draw four or five feet less water than you ought to bring a screw vessel to draw), then I consider the advantages to be altogether in favour of the screw in a sea-going vessel.

2789. That is, assuming she is never likely to be put into a position where she will have to encounter shallow water?—Yes.

2790. You think the screw is more effective than the paddle wheel in such cases?—For a sea-going steamer, I think it is the more proper propeller.

2791. That is the result of your experience in the voyages of the "Great Britain" and the "Great Western"?—Decidedly so; and I will give the Committee the reasons for my opinion. The "Great Britain" is 54 feet wide; if she had been a paddle-wheel steamer, she would have been 90 feet wide; that is a very awkward length going into docks and harbours. In a long voyage in a paddle-wheel steamer, you can only carry sail to effect with a very fair wind; when it blows hard, in a screw vessel you may carry sail just like any other vessel which has no steam-engine on board of her, and with just the same effect, barring the drag of the screw if you do not lift it or feather it. You may full rig a screw vessel, the same as you would any other vessel, and she would be

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be just as good a sailing boat as if she had no screw at all in her, nor any engine on board; and you may carry sail when it blows a hurricane, if her canvas will stand, and put the screw on one side, and there will be no difference in the speed through the water. Then you may sail within four or four and a half points of the wind. The screw helps you very much in getting to windward. You cannot in a heavy gale set sail in a paddle-wheel steamer, because one wheel is often out of the water and the other too deeply immersed.

2792. Do the advantages which you attach to the screw, as respects full power, extend in nearly the same degree to cases where the screw is only an auxiliary, steamer or not?—My opinion of the screw, looking at it as an auxiliary power, is, that in 20 years hence the whole mercantile business from England to America will be carried on in auxiliary screw vessels. I speak of merchant vessels for carrying cargoes; but as a packet to carry Her Majesty's mails, I cannot look at anything which is not the fastest and with the highest power possible. For the purpose of carrying the mails, you ought to have the best speed you can get.

2793. With your view of the screw, you would be disposed to recommend the screw to the consideration of the new company?—Most decidedly.

2794. In preference to the paddle?—Decidedly.

2795. You stated that your opinion was in favour of a rather larger nominal power not quite worked up to the full extent, as against a small nominal power worked fully up to it, or beyond it?—Yes.

2796. Were you applying that observation to the different modes of working expansively or not?—Yes.

2797. You think there is considerable economy in working expansively?—Yes; and then you would have at times, when you might require it, the means of putting on a much larger power.

2798. Mr. *Corry*.] With respect to the consumption of coal, comparing an engine of 400-horse power working to only 300-horse power, with an engine of 300-horse power working up to 300-horse power, which would require the greater quantity of coals?—The quantity would be about the same; it depends upon your boilers what amount of speed you get; if you have an engine which ordinarily makes 20 revolutions, and you can get up the steam to make it go 40 revolutions, you will increase your speed about one-fourth, but of course consume more fuel, a great deal more.

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2799. Did the "Great Britain" ever encounter any heavy adverse gales in her passage across the Atlantic?—Yes.

2800. Upon those occasions did you drive her head to wind?—She was driven against it.

2801. What power were the engines working up to on those occasions?—The most we got out of the "Great Britain" was about 17½ revolutions under the best circumstances; she was in the gale only working up to 11½ to 12 revolutions, and that in a very heavy gale of wind; one of the heaviest gales of wind I was ever out in, almost.

2802. Mr. *Divett.*] The nominal power of the engines was 1,000 horse, was not it?—It was 1,000 horse, 3,500 tons.

2803. What power were they working up to on that occasion?—They never worked up to above 5 lbs. pressure to the inch.

2804. Therefore on that occasion the "Great Britain" may be said to have had only auxiliary power?—We were putting all the power on we could.

2805. If the power did not exceed 500 horses, she can hardly be said to have been any thing more than an auxiliary screw vessel at that time?—The whole power was on, but that was the only effect. The sea would not allow the screw to go round; we could not get any greater number of revolutions, but we had the whole power we could put on.

2806. Mr. *Bright.*] What is the usual pressure upon marine boilers?—They have got it up to 20 lbs.; we started with 4½ lbs.; the "Great Britain" was 5 or 5½ lbs. I believe now 7 lbs. is the least now.

2807. Mr. *Corry.*] What was the average speed of the Great Britain in crossing the Atlantic?—It was very hard to test it; she had only made two voyages, and was out on her third; in one of them she broke one arm of the screw off, and kept breaking them one after the other. We started with five (I think) arms, and she broke one half-way across the Atlantic, another off the coast of Nova Scotia, two more off Nantucket Shoals, and she went in with only two arms, if I recollect right. She came home without any; she had only one stump of an arm left, and they screwed away with that and did a great deal of good with it.

2808. Mr. *Berkeley.*] Which would be most easily repaired at sea in case of accident, a paddle-wheel steamer or a screw steamer?—You cannot repair a screw at sea in a large vessel; if it is gone you must come to your canvas.

2809. But you may repair a paddle-wheel steamer, may you not?—

not?—To some extent; you cannot do anything very serious to them.

2810. For the postal service, you consider full power to be essential?—I think there should be full horse power, and the shortest possible course.

2811. You think you cannot attain to anything like certainty as to the time without that?—I think it is quite out of the question for you to arrive at any certainty as to time, without full horse power.

2812. Lord *Naas.*] You have said that you consider full horse power essential to a postal service?—I think so.

2813. Is it your opinion that you could find a vessel of full horse power, propelled either by paddle or screw, of sufficient ability to undertake a voyage, which would involve the necessity of a dead run of 3,500 or 4,000 miles?—Yes, even of 5,000 or 6,000 miles.

2814. What sized vessel should it be?—She should be 2,500 tons, and should carry no cargo at all; nothing but her coals.

2815. You think it is perfectly possible to find a vessel of sufficient power to perform such a long voyage?—Certainly.

2816. Steaming the whole way?—Yes.

2817. With full power?—Yes; we want in a voyage of 3,000 miles about 500 tons of coal; double the voyage, double the coal.

2818. Mr. *Berkeley.*] Do you think a steamer with auxiliary screw power of 1,400 tons and 250-horse power, carrying 800 tons of cargo, could carry the mail to Australia with any degree of certainty?—Certainty would be out of the question, with 800 tons of cargo. I suppose she must carry 600 tons of coals; that with 800 tons of cargo would make 1,400 tons; then there would be 250-horse power, which would be 250 more tons for the weight of the engines, the boilers, and the water in them. That would bring it to 1,650 tons; then comes a gallon per head for every passenger every day that she is at sea, and provisions, which would not weigh much. I should think such a vessel with 800 tons of cargo ought to be capable of carrying inside of her 1,700 tons.

2819. Lord *Nass.*] Can you give the Committee any instances of long voyages exceeding 3,000 miles having been performed by full power steamers?—No, I think there is no such voyage performed by any steamer, except the West India Mails.

2820. I speak of a dead run without stopping?—I do not

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believe they coal anywhere; they stop sometimes at Madeira to land passengers.

2821. There have been no instances of full power steamers having gone such a long voyage as it would be necessary to take from Panama to New Zealand or round the Cape?—There is the instance of the "British Queen" making one stretch to New York, going almost down to the Tropic to look for fine weather; I think she steamed 5,000 miles on that voyage; she went quite out of her course in search of fine weather; I believe the Belgians had her at the time. They did not like to face the westerly winds of the Atlantic, and they went south to look for a fair wind.

2822. Do you know what her speed was?—No, we beat her in the "Great Western;" her speed must have been something less than ours; we had a race across the Atlantic.

2823. What was your speed?—The average was 8½ knots.

2824. What was hers?—Hers was an average of 8¼ perhaps, or something of that kind; we took a whole day to get out of sight of her.

2825. Mr. *Currie.*] You said just now that it would be all over with the screw if anything happened to it?—As far as the screw is concerned, it is a thing which cannot be repaired at sea under water.

2826. Is there any difficulty in fitting another screw?—Yes, a large one.

2827. Are you aware that the Queen's ships carry spare screws?—I dare say they do; we had one in the "Great Britain," but we could not have put it on at sea.

2828. Are you aware what they do in the Queen's ships now in that respect?—I am aware they have auxiliary screws. I do not know anything of the "Arrogant."

2829. Do you know the "Dauntless"?—No.

2830. Do you know that they can put a spare screw on in a few minutes?—No; but surely they are very small screws for that work.

2831. *Chairman.*] You stated in a former part of your evidence that you did not consider that a vessel such as those which are proposed by the Screw Company to carry out this communication of 1,700 tons with 300-horse power would be able to maintain an average speed of eight and a half knots an hour?—Taking the homeward and the outward passage together, I think they might do so; they have a fair wind from near the Cape for 6,000 miles. I think an average speed of eight knots might be maintained, taking the home voyage and the outward voyage together.

2832. What

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2832. What difference would there be between the outward and the homeward passage?—I should think they would be as long again making the passage from Cape Leeuwin to the Cape of Good Hope as they would be going out there.

2833. What do you consider the speed of a vessel with full power would be on such a voyage?—Thirteen knots when at her full speed.

2834. What would be the average?—Nine knots an hour; or nine and a half perhaps.

2835. The Committee have before them a return which they have received of the "Hellespont"; she is a steamer of 560 tons, with 80-horse power; it has stated that that vessel came in fully laden, and yet the main speed she had attained was 8.47 knots per hour; do not you consider that that steamer is about of the same character as a steamer of 1,700 tons with 300-horse power?—They would be very nearly alike. I am surprised at the passage.

2836. If it should appear from the evidence before the Committee that that steamer, with a full cargo on board, had been able to maintain a speed of 8.47 knots per hour, do not you think we may argue that a vessel carrying the full extent of cargo, such as has been mentioned, would average the same speed?—Coming from the Cape, I do not think that that would apply, as it would on the other side of the Cape; she would either have no wind or a side wind, and a fair wind, the whole way.

2837. You stated that a vessel of 1,700 tons, with a full cargo, could not maintain that speed. In the case which has been mentioned we have a vessel with a similar proportion of power to tonnage which maintained that speed; does not that fact strike you as an argument in favour of the probability of the former vessel maintaining the rate which is proposed?—It is in a different sea. In the one case the wind blows for nine months of the year one way; the other is a case with the wind chiefly on her side. I think it is a very surprising average under the circumstances. I suppose if one vessel could do it the other would do it; but I should like to see how the wind was in the case which has been mentioned. In that case she carried her canvas nearly the whole time.

2838. It has been stated to the Committee that a vessel would run out of the westerly gales when she got into latitude 24 or 25, and would have a fair passage from that latitude to the Cape of Good Hope?—Then she would very much increase her distance.

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2839. Mr. *Scott.*] Have you had any nautical experience in those seas?—None; I began with saying so.

2840. Mr. *Cowper.*] Will you look at the other voyages of those vessels, and say what the average speed was?—In the case of the "Hellespont" the average speed which is given is 7.45 knots; the average of the next is 6.70 knots.

2841. If those vessels were only able to maintain an average of less than eight knots between the Cape and England, do you think they would reach a higher average beyond the Cape, between the Cape and Australia?—No, I think the average would come out lower; I think they would get the best average between the Cape and England.

2842. Lord *Naas.*] Why do you think so?—Because they would have more fair wind, and more fine weather.

2843. Surely nine months of the year on the outward voyage they would have fair wind the whole way, from the Cape to Australia?—And a foul wind the other way, which would bring down the average.

2844. Would she not run up into a north latitude?—Then she lengthens her course, and increases the distance. I am calculating the distance by the shortest possible course, and if a vessel goes to look for a wind to the north or the south, she increases that distance to an indefinite degree.

2845. Mr. *Bright.*] You were acquainted with the building both of the "Great Western" and of the "Great Britain"?—Yes, I superintended them both.

2846. Were those ships built both of wood or both of iron?—One is built of wood, and the other of iron. The Great Britain is built of iron.

2847. Is there much difference in the cost of vessels of equal tonnage, and capable of similar service, the one being built of wood, and the other of iron?—We did not contract; we built our own ships, therefore we had it done in a very different way from the way in which builders ordinarily do it; but I understand that you can contract ton for ton less for iron, but not a great deal less than you can for wood. It must entirely depend upon your own specification. If you choose to say, Build me a ship of the thickness of tin, or I shall be contented with a quarter of an inch, the cost will be less than for half an inch thickness of plate. If you say, We must have a strong ship, you add to the weight of iron required, and accordingly to the expense.

2848. If you were contracting with the Government for a service, such as that which has been spoken of, and wished to have your ships sufficiently strong and safe and durable, are you

you of opinion that it would require somewhat less capital to supply iron ships than wooden ships?—I think it would require less capital to supply iron ships than wooden ships; at present, particularly, the price of iron is very much reduced, and afterwards less for repairs.

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2849. Can you tell the Committee whether the application of machinery and the various improvements which are being made in tools, have been more directed to improvement in the building of iron ships, and in cheapening their cost, than in the building of wooden ships?—I believe at this moment they can do everything with machinery for an iron ship, except putting the plates in their places; we did not do so; we accomplished everything ourselves, without using machinery; but I have heard that by the application of machinery they can do things at one-third less expense than we did when we built the Great Britain.

2849*. With regard to the cost of repair of iron ships compared to wooden ships, can you give the Committee any information?—We have the "Great Britain," as an instance. She lay for 12 months with large holes in her bottom, one of which you might drive a wheelbarrow through, which was really the case with one hole we stopped after being exposed on the rock. She was perfectly capable of being repaired; her upper works were not injured in the slightest degree, and the iron, after lying two years in the docks at Liverpool perfectly still, where a vessel takes the greatest possible harm, and although cockles so large as to cause a report of their having been sold for 5*l.* were taken off her bottom, she is not at all the worse for it. She has been scraped and cleaned, and the iron is no worse.

2850. The Committee from those facts are to conclude that the cost of repair of an iron ship would be less than in the case of a wooden ship?—I think an iron ship, unless she meets with accident, is never out of repair, and cannot get out of repair as far as the iron alone is concerned.

2851. With respect to speed perhaps the "Great Western" and the "Great Britain" are not ships so much alike as to enable you to draw a comparison between them?—They are not.

2852. Take two ships as much alike as they can be built, one of wood and the other of iron, what should you say as to the comparative speed of those two vessels?—I have heard something to-day which has rather astonished me upon that subject. Experiments have been made, and are being made this very day, between iron and wooden vessels on a piece of water with a pulley, by Mr. Scott Russell, who built Mr.

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Stephenson's yacht, the "Titania"; it takes more power to pull the iron model than the wooden one of exactly the same displacement; the wooden one beats the iron one in running over that bit of water. Therefore there is something like attraction, which Mr. Russell is experimenting on at this moment, which pulls back the iron ship more than the wooden one; but the fine lines you can give an iron ship, so much finer than you can a wooden one, gives her an advantage in the way of speed again, which balances the other. The great drawback for iron ships is, that when they are lying still their bottoms foul. Mr. Stephenson is having something put on his vessel which has been applied in the case of the Oriental and Peninsular steamers I hear successfully, and that is scrapings of copper mixed up with oils and put on the bottom, quite a new application.

2853. Have there been any experiments made in casing the bottoms of ships with a kind of glass, such as has been used for the inside of pipes?—I do not know; I have heard it talked of, and I have heard of an iron vessel going to be electrotyped at a considerable expense, in the dock, with copper.

2854. Are there any other grounds of preference in favour of iron ships over wooden ships; are they more safe in any way than as passenger ships?—No, I should not say that they were; if you came to a certain point and the boat filled, I should rather be in the wooden one; I do not apprehend there is any difference in point of safety; there are some other points in which there is preference to be given to iron ships; with the same outside shape in both, in the iron ship you gain upon the average a foot more space inside than you do in the case of wood, and you gain in buoyancy also; to represent half inch plates and six inch angle irons, in iron, would take four-inch planking, and three inch ceiling, making seven inches, and about nine inches of timber; there would be sixteen inches *versus* half an inch, except what the angle-iron takes off, for it would not be proper to put all sorts of cargo against the side of the iron.

2855. Estimating that the original cost of an iron ship would be somewhat less, that the cost of repairs would be less, that the capacity would be greater, and that from her fine lines you might calculate upon a somewhat superior speed, may not the Committee conclude that that description of vessel is very advantageous for a company contracting with the Government and anxious to carry out a description of service such as that which the Committee has been discussing?—Decidedly, and I would say as regards the consideration of health it is better; the

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the sweetness of an iron ship is infinitely greater than that of a wooden one.

2856. That in long voyages and in hot climates you consider important?—I consider it very important.

2857. Mr. *Corry.*] Is there no inconvenience from the condensation of vapour in an iron ship?—There is a little, but it does not affect the question; all the cabins are ceiled with wood; I have made many experiments, and I believe that no harm is caused in the ship, nor is any smell caused; it makes the inside rather damp, but nothing to hurt at all when kept well painted; a great deal of condensation was expected, but it did not turn out to be great.

2858. Lord *Naas.*] Which vessel is the hottest in hot climates?—I should suppose an iron ship will get the hottest, but it would cool more quickly at night.

2859. Mr. *Bright.*] With regard to safety, is it not the practice to build iron ships in compartments, so that happening a certain class of accidents to which both ships are liable, the iron ship would be much more safe?—You may put compartments into a wooden ship.

2860. With the same facility and with the same advantage?—Yes, I think so; you may put iron compartments into wooden ships, so as to make them tight; and I have not any great faith in the compartments myself, except as strengtheners.

2861. Do not you know a case in which a crew were saved in that way?—I know several cases in which the hands were saved; the compartments kept them up long enough to save the passengers, but they are rarely made quite tight; they ought to be.

2862. What was the name of that vessel?—It was an iron ship coming from Liverpool to Portsmouth or London; she run upon the Scillies, and went down in about 20 minutes; but the after compartment or the fore compartment kept her up; she filled at one end. If they could have stopped the engines, I believe they would have saved her, but they could not get into the engine room to stop the engines. The wheels having knocked against the rock, broke a hole in her side. I do not think compartments are always tight enough for the ship to free herself from the water, except through the engine feed-pumps.

2863. Mr. *Corry.*] With respect to the comparative strength of wood and iron, do you think that a wooden vessel under the same circumstances as the "Great Britain" was placed under, when she was ashore in Dundrum Bay, would have suffered more or less than the "Great Britain"?—I am sure there

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there were five gales of wind, three of them awful gales, that would have knocked a wooden ship to pieces; I was on board of her one night to try the effect; the sea ran all along her deck, and to the extent of 10 feet high, with the most tremendous blows, although those blows were warded off by the breakwater to a great extent.

2864. Is it your opinion that greater strength can be obtained with iron than with wood?—Yes; the strength of an iron ship is astonishing, you may have an iron ship's stem in one place, and her stern in another, and she would not, even with the engines in the middle, settle the least in the world. The "Great Britain" was suspended, with a rock in the middle, and she came down nine feet at one end; she ought to have broken in the middle, and would have done so if she had been made of wood.

2865. Mr. *Stanley*.] If an iron ship strains in consequence of pitching or rolling in a heavy sea, is not there more difficulty in repairing her than if she were made of wood?—No, I should say it would be easier, if you could get at the place. I hold that an iron ship never strains.

2866. Mr. *Cowper*.] If a vessel strikes against a rock, and there is a considerable hole made in her, is not it much more easy to stop the hole in a wooden vessel than in an iron one?—If it is below the water, it is a hard job to stop it in either case; the only way I know is that of putting a sail outside, and letting it be sucked in. If an iron ship strikes anywhere accidentally, it makes but a small hole where she strikes; but if a wooden ship strikes as hard as an iron ship, it shakes the frame, and all that part of the ship.

2867. The actual hole made in the iron vessel would be much more difficult to close up than in the wooden vessel, would not it; you cannot nail a bit of iron on?—Not below the water; but if it can be got at, nothing is so easy as to put a bit of iron on.

2868. Mr. *Berkeley*.] You say an iron ship would not strain; did not we hear that the "Nemesis" went in two?—She was not properly built; she was too weak.

2869. *Chairman*.] Is not the cost of repairing an iron ship very considerable?—No; I should think very inconsiderable; it depends upon the amount of damage of course. The "Nemesis" was built very long and very narrow, and she had what no ship ought to be built with—she was cut some feet down the middle to let the paddle-beam into her.

2870. Mr. *Berkeley*.] You are aware that an iron ship costs considerably less per ton than a wooden ship, are you not?—I do

I do not know the price; I mentioned just now that it must depend upon the price of iron; now, iron is cheap.

2871. Mr. *Scott.*] It would vary according to the price of iron?—Yes, and the price of wood also.

2872. *Chairman.*] Was not one of the reasons for the "Great Britain" not being sold, the cost of unrivetting the ship?—The difficulty of her being sold was, that anybody who bought her would have an outly of 20,000 *l.* to incur before they could make her fit for sea.

2873. Was not it calculated that taking the rivets out of the vessel so as to repair her would be an enormous expense?—No, that would be a mere nothing. It is all done now.

2874. Mr. *Divett.*] You have spoken of some experiments which are going on upon the "Titania," Mr. Stephenson's yacht. Does the result of those experiments, as far as they have gone, tend to prove, that assuming the same lines in both cases, there is some difficulty in propelling iron which there is not in propelling wood?—That the wooden vessels sail better than the iron vessels, frame for frame, model for model, in light winds; iron vessels sail better than wooden vessels when it comes on to blow hard. One is more easily moved with a touch of the finger than the other is; that is all one model.

2875. Have you seen those experiments yourself?—No; I am going to see them to-morrow.

2876. You have taken so much interest in the "Great Britain," and everything connected with her, that perhaps you know what is now being done with her, and what it is proposed should be done in future?—She is to go to the United States. They are putting into her a pair of Penn's engines, nominally 500-horse power, which I believe are intended to work at 700 or 800-horse power. They call them 500, and I suppose they contracted to pay for 500-horse power; but I know from good authority that the boilers will be equal to 750-horse power. Captain Matthews is to command the vessel. He has just left the "City of Glasgow" steamer, having made in her four or five voyages to Philadelphia and back; she is an auxiliary screw steamer. She is in the dock at Liverpool now, and will be out by the end of July.

2877. Do you happen to know anything about the performances of the "City of Glasgow"?—Yes, they are very satisfactory, and she pays very well; she has carried a large cargo. I think her average passages have been about three days over the passages of Cunard's vessels.

Duncan Mackellar, Esq., called in; and Examined.

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2878. *Chairman.*] HOW long have you been in the colonies?—About 15 years, at two different periods; 10 years at one period and five at another.

2879. Which colonies are you best acquainted with?—Sydney.

2880. Have you visited other colonies?—I have been at Van Diemen's Land and Port Phillip.

2881. At Adelaide?—I was never at Adelaide.

2882. Are you acquainted with New Zealand?—Not at all; I never was there.

2883. Are you a nautical man?—I am.

2884. You are connected with the Hunter's River Steam Navigation Company at Sydney?—As far as regards the building of steamers. I have been appointed special agent in this country to build steamers; I am now building several vessels in the Clyde for that company.

2885. How many steamers have the Hunter's River Company?—They have seven in the colony, four of iron, and three of wood, independently of the three vessels which I am now getting built, which are of iron.

2886. Do they carry on intercolonial communication?—They do; for the last 10 years they have been carrying on the intercolonial mail service.

2887. Will you state to the Committee the mode in which that communication is carried on?—It is carried on in this way: there is one iron steamer, the most powerful we have, goes to the southward, calling at Twofold Bay, Melbourne and Launceston; we have daily communication with Newcastle and Maitland, Hunter's River, by means of two iron steamers, and one of wood; and monthly with Brisbane, Moreton Bay, and Clarence River, by means of two steamers. That is the mode we have adopted for carrying on the mail service there.

2888. What is the size of those vessels?—About 320 or 330 tons.

2889. What is their power?—About 100 or 120-horse power.

2890. How long has the company been established?—I fancy the company has been established for the last 15 years. We have had three iron steamers for the last 10 years; one was built at Bristol, and two in London.

2891. Have the company any establishment in the colony for repairing their vessels and engines?—We have very extensive

sive establishments, at least the most extensive of any in those colonies for both making engines and boilers, and repairing our vessels, and have instructions to take out four first-rate engineers and six boiler makers.

2892. At what place is that establishment?—At Sydney, which is our head-quarters.

2893. Sydney is the head-quarters of the company, is it?—Sydney is the head-quarters.

2894. Is there any considerable quantity of merchandize carried by those vessels?—There is a very considerable quantity.

2895. Between what place is that communication most remunerative, in a mercantile point of view?—I presume Port Phillip and Launceston would be the most remunerative points.

2896. What is the general description of the merchandise which is carried?—All descriptions of English goods. What is not suitable for one market is generally found to be suitable for the other colony; we bring wool and other produce to Sydney.

2897. Does the company carry on the postal communication?—Yes, it does; independently of the steamers there is a postal communication from Sydney to Melbourne by land twice a week.

2898. Can you state the average length of time which the steamers are in making the passage; first, between Sydney and Port Phillip?—At present they do it in about three days, touching at the different places on the coast before reaching there; they could have done it much more quickly, but they touch at two or three different places; they touch at Browley, then at Twofold Bay, and then at Melbourne.

2899. Between Port Phillip and Adelaide what time is occupied?—We have no communication there now, but it is the intention of the company to extend their trade to that colony when those new vessels which are now being built go out; one of those is to be a powerful vessel.

2900. From Sydney to Launceston what is the time occupied?—The vessel which goes to Melbourne passes over to Launceston; it then returns to Melbourne, and proceeds immediately to Sydney.

2901. How long is she making the passage from Melbourne to Launceston?—I think about 16 or 18 hours.

2902. Is there any arrangement existing between the Government and the company in reference to the postal communication?—I believe none; I do not think that there any contracts,

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contracts, but it is an understood thing; they carry it on at a very trifling expense indeed.

2903. Do you know what is the charge they make per letter?—I believe it is very trifling, if they make any; I am not aware what the charge is.

2904. What is the capital of that company at present?—The capital of the company, as far as I understand, is 250,000 *l.*

2905. Is the capital chiefly owned by shareholders in the colony?—In the colony altogether. There may be some colonists who have returned to this country who may have an interest; I am not aware of any; it is generally owned in the colonies; but there may be some individuals in this country who may have an interest in it.

2906. Are you acquainted with the navigation of those seas?—I have been occupied for many years in passing between this country and India, and New South Wales, and I have had very considerable experience.

2907. Can you speak as to the violent gales which the Committee has been informed blow off the coast of Australia at different periods of the year?—From my own experience in 8 or 10 voyages, I can speak positively to what has come within my own knowledge.

2908. At what periods of the year?—I have been there at all seasons of the year in going to the colony. I speak of the outward passage; we went on some occasions through Bass's Straits; on other occasions to the southward of Van Diemen's Land; when I wanted to call there I went to the southward; when I went to Sydney only, I went through Bass's Straits.

2909. Do you consider that the gales off Cape Leeuwin are such as to prevent a sailing vessel making the passage at any period of the year?—I think it would be impossible to make the passage in the winter season with any degree of certainty. I do not believe there is one ship in a hundred that ever attempts the passage in the winter season.

2910. Do you mean to say that there is not any vessel that attempts the passage from Bass's Straits to Swan River in the winter season?—It is very seldom; there are some of the small coasters which know every creek and corner along the coast, which take shelter there; but they are often obliged to return after attempting it. I do not think it is very general in the winter season that they manage to make the passage.

2911. The Committee has been informed that vessels take advantage of the bight in Australia, and make the passage during the winter season?—I never heard of any vessel bound for

for India attempt the passage in the winter season, but it is always adopted in the summer, although I found it difficult even at that season. Vessels bound for England never attempt it in the winter, and very seldom in the summer. In corroboration of my statements, I may say that the eight vessels which have just arrived from Australia, which sailed about the months of January and February last, they have all come by the Cape Horn route, instead of going to the westward, although the most favourable season of the year for making that passage. Those vessels have all made good passages of from 103 to 110 days.

2912. Are you acquainted with the power of the steamers?—I am slightly acquainted with it. The power of three of those now in the colony will give a speed of nine knots per hour, and those now building in the Clyde are guaranteed a speed of 10 knots an hour when deeply loaded.

2913. Do you consider that your own steamboats would have great difficulty in making the passage from Port Phillip to Swan River during the winter season?—I think very great difficulty. I am persuaded in the gales I have met with, and I am sure many gentlemen who have gone that way would give the same testimony, no vessel of any power could face it and make any progress.

2914. Are you acquainted with the Torres Straits passage?—I have been twice through there at a very early period, when the passage was not so much adopted as it is now; I made that passage twice 27 years ago.

2915. Do you consider that that is a passage which, from your knowledge of Australia, steam vessels could traverse with safety?—Making the passage from the eastward, I think it is perfectly safe. I found no difficulty whatever in making the passage; I went from Sydney in 32 days to Singapore; I staid eight days at Batavia, and we only anchored three times in passing through the Straits. I went the outer passage, entering the Barrier Reef nearly in the latitude of Murray Island; but it would be very difficult, if not impossible, to make the passage from Singapore to Sydney, by Torres Straits, at any season.

2916. That was the outward passage?—It was the passage from Sydney to Singapore.

2917. Did you go by the outer passage of Torres Straits?—Yes, outside of Wreck Reef and Eastern Fields, entering the Barrier Reef by the Claudine Passage, in nearly the latitude of Murray Island, that island bearing west or west half south.

2918. What was the size of the vessel you commanded?—About

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About 454 tons old measurement; that is about 600 tons of the present measurement.

2919. How do you consider that a communication effected by means of steam-vessels, either from the Cape or Singapore, would affect your interests?—Any route would injure our trade which did not make Sydney the first place of call; none of them would injure our company in the least, if they made Sydney the first place of call.

2920. You calculate upon becoming the means of the intercolonial communication? — Having already carried on the intercolonial mail service for so many years, at a very trifling cost to the colonial government, we naturally calculate upon our interest being taken into consideration in any contract that may be entered into for the conveyance of the mails to the colony; independently of which, I think the people of New South Wales would be very dissatisfied indeed with any other route except that to Sydney; Sydney, Port Phillip and Hobart Town contain more than two-thirds of the population of all the Australian colonies put together; besides Port Phillip and Hobart Town would receive the mails from Sydney quicker than in case of their coming by the western passage, the passage from Sydney to those places being shorter.

2921. Are you acquainted, from the experience of others, with the character of the weather between New Zealand and New Holland?—The weather is comparatively very moderate indeed compared to what it is anywhere else, the easterly wind seldom or ever blowing home. I made four passages to this country by way of New Zealand; though we did not touch at it, we passed in sight of the island; and I heard from those engaged in the trade that the wind and weather was generally fine.

2922. Are any of the vessels, either those now in your employ or those which the company are having built, of that character that you would be able to carry on a communication in them between New Zealand and New Holland?—I think the largest vessel we are building might accomplish it, but the distance is very considerable.

2923. What is the distance between Sydney and New Zealand?—I make the distance from the town of Sydney to the North Cape of New Zealand 1,086 miles; of course there is a considerable distance further from the North Cape into the Bay of Islands; to the entrance of Cook's Straits it is much about the same I believe.

2924. You know something of the character of the trade and communications that are likely to pass between Australia and

and New Zealand; what sized vessels do you think will be applicable to the communication between New Zealand and Australia?—I should think a vessel of 500 or 600 tons with 200-horse power, would be sufficient for the purpose of a communication between Sydney and New Zealand.

2925. Can you state to the Committee what time the Overland Mail takes from Sydney to Port Phillip?—It starts every Tuesday and Friday from Sydney for Melbourne, and leaves Melbourne for Sydney upon the same days.

2926. How many days would you allow for answering letters, Sydney being made the more central point, and a stoppage allowed there of 8½ days?—I would allow four days. We have now a railway in course of construction between Sydney and Melbourne; they commenced it before I left the colony, and from all accounts, it is progressing very fast. I understand they have been paying a dividend already. The Government have guaranteed 5 per cent for the first 100,000 *l.* subscribed.

2927. When did you leave the colony?—I left on the 16th of July last.

2928. Lord *Naas.*] Is there any reasonable hope of that railway being made between Melbourne and Sydney within the next 15 years?—I think at present the railway to Goulbourn may be accomplished in a short time, the distance being only 132 miles.

2929. How far is it from Sydney to Melbourne overland?—I have no doubt it is close upon 500 miles.

2930. Mr. *Divett.*] Can you state from whom you received this information as to the rapid progress of the railway?—I have seen a letter from a gentleman, who has returned only about a week ago.

2931. Do you consider the interests of New Zealand or Adelaide of greater public importance, with respect to the merits of the proposed routes?—I consider the interest of New Zealand is greater than that of Adelaide. I have some papers here on that subject. Here is the "Sydney Trade List," dated the 9th of November; it shows that there were 12 vessels expected from New Zealand, 23 from California, and 11 from the South Sea Islands, making altogether 45 vessels from that quarter. I have another paper, which conveys information of the same kind; that is in October 1850. From California there are 15 vessels, and from the South Sea Islands 12, and 12 from New Zealand. With respect to the importance of Sydney, I may say that we have a tonnage of vessels belonging to that place alone of 17,879 tons, employing

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men and boys to the extent of 2,062. With respect to New Zealand, there is an increasing trade as well as to California. I find that there were no less than 271 passengers went by one vessel to California, and 1,908 in eight vessels from 23d January 1850 to 14th May following.

2932. What do you consider the relative importance in a commercial point of view between Moreton Bay, Newcastle, and the other places to the north of Sydney, as compared to Adelaide?—I think those other places are of equal, if not of greater importance than Adelaide; Moreton Bay in a short time will be separated from the colony of New South Wales altogether.

2933. Lord *Naas.*] Have you any account of the number of passengers who have arrived in ships in Australia, coming from California?—There are a good many returning now; a great many of those who went are now returning; I cannot state the number just now, but every vessel which arrives from California, and those places, brings back passengers.

2934. There is a considerable amount of emigration going on from California to Australia, is there?—I have no doubt of it; there is a trade arising now between the two countries, which will be of very great importance indeed, far beyond anything which could have been calculated on about three years ago.

Martis, 20° die Maii, 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. Henry Berkeley.
Mr. Chancellor of the Exchequer.	Mr. Divett.
Mr. Willcox.	Mr. Corry.
Admiral Bowles.	Mr. Henry Currie.
Sir James Hogg.	Mr. Cowper.
Mr. Wilson.	Mr. Mangles.
	Mr. Scott.

VISCOUNT JOCELYN IN THE CHAIR.

Thomas Lloyd, Esq., called in; and Examined.

T. Lloyd, Esq.

2935. *Chairman.*] WHAT appointment do you hold under the Admiralty?—I am Chief Engineer and Inspector of the Machinery of the Navy.

2936. How

2936. How long have you been employed in the steam department of the navy?—About 18 years.

2937. Is that from a period long antecedent to the introduction of the screw as a propeller?—Yes, long antecedent.

2938. Has your attention been directed to various improvements with regard to the screw since its first introduction?—It has, from the first introduction of the screw up to the present time.

2939. What was the first screw vessel built for the navy?—With the exception of a very small vessel called the "Bee," the "Rattler" was the first screw vessel that was built.

2940. Do you consider the performance of that vessel to have been satisfactory?—Very satisfactory, as far as the working of the screw-propeller was concerned; the vessel would no doubt have gone faster if she had been of a better form; but as regards the action of the propeller it was very satisfactory.

2941. Mr. *Corry*.] I believe the "Rattler," was built of the same form as a paddle-wheel vessel?—Yes, she was of the same form and the same size as a paddle-wheel vessel, and fitted with engines of the same power.

2942. She was built for the express purpose of testing the comparative powers of the paddle-wheel and the screw?—Yes.

2943. *Chairman*.] What was the proportion of power to tonnage in the "Rattler"?—About one to $4\frac{1}{2}$.

2944. Which would you prefer as the material for screw steamers, wood or iron?—In respect of velocity I should certainly prefer iron.

2945. It has been stated by Captain Fitzroy in the former evidence, a similar question having been put to him as I have now put to you, that wooden vessels would soon be shaken in the after-body, which is not the case with iron steamers. "For instance, in the 'Arrogant' the bearing of the shaft was continually yielding, from the wood itself in which the bearing was secured giving way. The wood, by constant compression and constant working, gradually loses its power of resistance, the fibres become bruised and compressed, which is not the case in an iron ship. An iron ship affords a very much better foundation for the engine, and for the working of the shaft; the shaft works much more uniformly." Can you speak as to the "Arrogant"?—No; certainly not as to those facts which Captain Fitzroy refers to. Indeed I think, as far as strength goes, a wooden vessel may be regarded as perfectly efficient with the screw. The chief advantage of iron I apprehend to be

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be that it enables you to give a finer form to the part of the ship near the screw, in consequence of which the resistance of the ship is very much diminished, and the water has free access to the screw propeller; at the same time I should, of the two, prefer an iron ship to a wooden one, in point of strength.

2946. Would a vessel designed by a skilful builder for the screw, constructed of iron, and of the same tonnage and power as the "Rattler," ensure a higher speed?—Unquestionably.

2947. Up to what power do the "Rattler's" engines of 200 horses actually work?—A little more than twice the nominal power; the nominal power being 200, the actual power was a little more than 400.

2948. Would the actual power of engines of 200-horse power, constructed at the present day, with a view to the attainment of high speed, be much greater than it was at the time the "Rattler's" engines were built?—Certainly; but the actual power would greatly depend upon the steps taken by the persons interested in the performance of the vessels. If they employed several engineers a degree of rivalry might obtain among them, which may induce them to make engines of 200-horse power work up to four times that amount, or even higher than that.

2949. What would be the actual power of engines of 250-horse power, constructed upon the best principles of the present day?—As I have just said, that depends entirely upon the understanding which the makers of the engines may have with the proprietor. The actual power of engines in the present day is often five times the nominal power; it varies from five times to twice; in some cases I have known it even higher than five times, so that the nominal power of engines is no criterion whatever of the actual power.

2950. But engines working up to a higher power than their nominal power would consume a greater quantity of fuel, and consequently the calculation as to the fuel that they consume must be greater than it would be if they worked up merely to their nominal power?—Certainly; the quantity of fuel consumed would be in well-constructed engines precisely in proportion to the power exerted.

2951. Then in the case of a vessel of 1,400 tons, with 250-horse power, working that power up to 1,000-horse power, the vessel would consume a proportionally greater quantity of coal?—Certainly.

2952. It has been proposed to put on the line to India and Australia *viâ* the Cape of Good Hope, some vessels of 1,400 tons and 250-horse power; do I understand you correctly that those

those engines of 250-horse power would be as powerful and ensure the same rate of speed as engines of 500-horse power constructed like the "Rattler's" engines?—Yes, they might be made so if the owners of the vessels desired it; if they wished to get a good result they would arrange with the engineer, so that those engines should work up to four times their nominal power; but if it were left entirely to the management of the engineer, or if the persons interested in the vessels desired to save their money, the engines might be made to work up to three times, or twice, their nominal power, not less than twice certainly in the present day; it depends, in fact, upon the size of the boiler more than upon the construction of the engine.

2953. If they work up to that additional power, the calculations which they formed as to the amount of tonnage disposable for passengers and traffic, would be upon a different basis?—Certainly; but I should say that you may take three times the nominal horse power in the present day as the minimum power to which engines would be worked that were constructed with a view to speed; they might go to four times very well.

2954. Have you formed any estimate of the speed that a vessel of 1,400 tons and 250-horse power would attain in fine weather without the aid of sails, assuming the engines to be of the best construction?—I should, from the best consideration I have given to the subject, say she ought to go at least 10 knots an hour.

2955. Can you form any opinion as to whether a vessel such as that, if employed in the Cape service, would make the voyage with great dispatch against a heavy sea?—I cannot speak to facts, because the thing has not been tried; I do not know any vessels which have been tried under such circumstances; but judging by the performance of screw vessels, as far as they have been tried, I should answer the question in the affirmative.

2956. Mr. *Corry*.] Do you mean comparing them with paddle-wheel vessels?—A screw vessel would, under most circumstances, beat a paddle-wheel vessel, because she is able to use her sails very effectually to co-operate with her steam power; and however fast she may be going by the power of sails, when steam is applied in addition, the vessel goes considerably faster, so that the screw vessel has a great advantage as compared with the paddle-wheel vessel.

2957. *Chairman*.] What addition to her speed do you suppose it would make, under favourable circumstances of wind

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and sea, her making use of her sails as well as her steam power?—It might make an addition to her speed of from two to three knots an hour. If she could steam at 10 knots an hour, and she had a favourable wind, with the addition of her sails, I think she would go 12 or 12 ½ knots an hour.

2958. You apply that answer to the vessels to which I have before alluded?—Yes.

2959. Would you consider that one of those vessels, with an auxiliary screw power, in making the passage to Australia, could compete with a paddle-wheel steamer of ordinary power?—I think she would beat a paddle-wheel vessel of ordinary power, taking one kind of weather with another, because in bad weather such a paddle-wheel vessel makes but a poor performance, in consequence of rolling so much.

2960. Mr. *Divett.*] Assuming engines of 250 nominal horse power, at what pressure would that be calculated?—In calculating the nominal power of an engine, you assume the pressure of the steam upon the piston to be 7 lbs. to the square inch.

2961. Then in working up to four times the nominal power, what pressure should you have upon the square inch?—We must have four times the pressure, if the speed of the piston were not increased.

2962. You spoke of having gone as far beyond the nominal power as five times; what pressure should you in that case have to the square inch?—We should perhaps realize a pressure of 21 lbs. upon the piston to the square inch, and obtain a speed of piston two-thirds above that assumed in calculating the nominal power.

2963. The calculation of the pressure in the case of the nominal power being 7 lbs. to the square inch?—Yes.

2964. But that would be the pressure if worked up to five times the nominal power?—Yes.

2965. In taking this extreme power as compared with the nominal power, what criterion do you take for the comparison besides the pressure upon the piston; do you take the quantity of water evaporated in a certain time?—No, that power is measured entirely by the pressure upon the piston and the velocity of the piston; those are the only two considerations in respect of the power; if you multiply the pressure by the speed you obtain the power.

2966. You do not take into consideration the quantity of water evaporated in a given time?—No.

2967. How would that question affect the quantity of coals consumed?—The quantity of water evaporated, and the quan-

tity

tity of fuel burnt, would be very nearly in proportion to the power actually obtained.

2968. By means of improved boilers you are able to evaporate a much greater quantity of water in a given time?—Yes, in a given time, but not without increasing the quantity of fuel; there are some small improvements which would affect that question a little, but not substantially.

2969. Assuming then that an engine working up to her nominal power consumed a certain quantity of coals, if she was to work up to three times that power she would consume a much larger quantity of coals?—Yes.

2970. And the calculation, if made upon the supposition of the nominal power being exerted, would be in error?—Yes, it would if that large power were always used; but not if that large power were used judiciously, when you wanted it, and at no other time. When you can use your sailing power with advantage, then the engine should not be worked up to its extreme power; with proper management an engine of great power can be worked more economically in respect of fuel than a smaller engine always worked up to its full power.

2971. Using it only in cases of emergency?—I would not say using it only in cases of emergency, but using it only when you wanted it.

2972. We have had it in evidence here that an engine of high nominal power, not always worked up to that power, is much more economical than an engine of low nominal power always worked up to that power?—Certainly it is so.

2973. Mr. *Corry*.] You stated, in the former part of your evidence, that as engines are now constructed for screw vessels, three times the nominal power would be the actual power that would be obtained?—Certainly; no person would be satisfied with less than that. If I had engines made for me, I should not think I was well used by the maker if I had less than three times the nominal power.

2974. If you heard that engines of 250-horse power were put in a vessel, you would expect that they would be worked up to 750?—Yes.

2975. Therefore their working up to 750 would not occasion so extravagant a consumption of coal as to disarrange the calculations of those who designed the vessel?—Certainly not.

2976. Admiral *Bowles*.] Do you entertain any doubt that screw vessels running between this country and Australia would be able to perform their voyages at 8½ knots an hour with great regularity?—I think they would.

2977. With respect to the question which was asked you

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about the pressure, that applies equally to paddle-wheels and the screw?—It does. At the same time you cannot so easily increase the power of paddle-wheel engines as you can increase the power of screw engines. If you desire to increase the power of a screw engine, and the boilers will supply sufficient steam, you have only to use a screw of a smaller pitch, and the power is increased, in consequence of the engine working faster.

2978. Mr. *Divett.*] That is by an increase of the number of revolutions?—Yes, and of course increased velocity of the piston is the consequence of that, supposing other things to remain the same. With a paddle-wheel vessel you cannot do that.

2979. Mr. *Corry.*] You stated that, comparing an auxiliary screw-vessel with a paddle-wheel vessel, you would prefer the former to the latter?—Yes.

2980. Would a screw vessel beating to windward under sail and steam make a greater distance in a given time than a paddle-wheel steamer head to wind?—Yes, that is my opinion; I do not know that I have sufficient facts from which I could draw that conclusion, but from the best consideration I have given to the subject, and knowing something of the performance of vessels under different circumstances, I am strongly inclined to that opinion.

2981. Mr. *H. Berkeley.*] You state that a paddle-wheel vessel going against the wind would make less way than a screw vessel which edged off the wind by beating to windward?—Yes, the screw vessel uses her sails with great effect at the same time.

2982. How can you make that comparison unless you state the exact course that the screw vessel takes?—I have looked at the performance of some of those small screw vessels, I have seen what they have done under certain circumstances, and I know pretty well from experience what ordinary paddle-wheel vessels have done. I do not pretend to make an accurate comparison; but I have sufficient facts to satisfy my own mind that it is so, though probably they would not be regarded as conclusive by every person.

2983. Mr. *Corry.*] It has been proposed by the Eastern Steam Navigation Company to put on paddle-wheel vessels from Ceylon to Sydney, of 1,200 tons and 400-horse power, and to maintain an average speed with those vessels of 10½ knots an hour; do you think that paddle-wheel vessels of that size and power would maintain that speed?—

speed?—We know that it has never been done yet by such vessels, and I have no reason to think that it would be done.

2984. What should you call a fair average speed for vessels of that size and power?—In the case of Cunard's vessels the average speed is only eight knots an hour, taking it over a period of years.

2985. Do you know what the size and power of Cunard's new vessels are?—I am not sure that I am quite accurate, but I believe the engines are 800-horse power, and the tonnage is 2,000.

2986. The vessels of 2,000 tons and 800-horse power would of course maintain a higher speed than vessels of 1,200 tons and 400-horse power?—Certainly; but any calculation based on the proportion of power to tonnage is a very erroneous mode of ascertaining the speed of a vessel, because a large vessel requires much less power in proportion to her tonnage to obtain a high speed than a small vessel requires.

2987. Mr. *Berkeley*.] You said that if a screw vessel, using her steam power, went 10 knots an hour, her sails might enable her to go 12 and 12 ½ knots an hour?—Yes.

2988. How would it be if she were sailing at 10 or 11 knots, and you put the steam power on, what rate of speed would she obtain in that case?—She would obtain a speed of a knot and a half or two knots more.

2989. Do you know what the average speed of Cunard's line of vessels is?—I should have thought it was much less than has been mentioned, 10 ½ knots an hour.

2990. Mr. *Divett*] You have stated that a much greater velocity can be obtained with an iron vessel than with a wooden one; have you paid attention to the difference of velocity obtained with the most perfect construction of vessels on the two principles and with equal power?—From all the experiments which have been made, we find that, practically speaking, the screw and paddles, in smooth water without wind, produce the same result, the power being the same.

2991. I am speaking, not of the comparison between the screw and the paddle-wheel, but of the comparison between an iron and a wooden screw steamer?—It is very difficult to put the result in figures; but we have seen cases where an iron ship and a wooden ship have been built nearly alike and intended to be exactly alike, and the power in the iron ship has been twice as effective as the power in the wooden ship.

2992. Twice as effective, measured in what way?—Measured by the speed of the vessels; that is to say, one vessel would go, say

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say 8 knots an hour, and the other 9½; I am not giving the figures accurately, but in about that proportion.

2993. You think with equal power, getting 8 knots out of a wooden steamer, you might get 9½ knots out of an iron steamer?—The vessel to which I refer was built at a time when sufficient importance was not attached to the fineness of the lines; the difference between vessels built in the present day would not be so great.

2994. Take ships equally scientifically constructed in both cases, you having stated that greater velocity can be got out of an iron steamer than out of a wooden one, I wish to know what the difference would be?—It is clear that there would be a difference, though it is not easy to say what it would be. In an iron steamer you can have the stern-post two or three inches thick, and the rudder-post in the same way two or three inches thick, and that may be fined off to any extent; that would cause a considerable difference in the resistance of the vessel, and at the same time it would allow the screw to act more efficiently, inasmuch as the water would get at it more readily; but I should be afraid to say what the difference would be. I do not think sufficient facts have been yet developed to enable any one to say what the difference would be; it would depend upon a great variety of circumstances.

2995. Mr. *Berkeley.*] Are you aware what the speed is of the paddle-wheel steamers running from Holyhead to Kingstown?—Their speed is from 14 to 15 knots an hour.

2996. *Chairman.*] Do you know what the proportion of the power to the tonnage is in the case of the "Llewellyn"?—Three hundred and fifty horse power, and the tonnage of the vessel about 650. I may say that that is one of the cases where the engine works up to an extraordinary power. In some of those vessels the actual power is nearly five and a half times the nominal power, which I found came out greater than the power of the "Terrible," one of the largest vessels in Her Majesty's navy.

2997. Mr. *Corry.*] Is the capacity of those vessels such as to enable them to stow coal sufficient for the performance of a long voyage?—No, they can stow coals sufficient only for 10 hours voyage at the outside.

2998. Could any great speed be attained with such vessels in a long voyage?—No.

2999. Mr. *Divett.*] Can you give the Committee a notion of the difference of expense in an engine built with a view to work up to its ordinary power and an engine built with a view to work up to its extreme power?—The actual cost of the engine

engine would be very nearly in proportion to the power realized.

3000. Mr. *Corry.*] But no engines are built merely with a view to work up to their ordinary power?—No, I should say that no engines are built to work up to less than three times their nominal power; I mean by respectable engine-makers who are anxious for their reputation.

3001. Mr. *Berkeley.*] Where you have an engine of 200-horse power, may the actual power realized be five times that amount?—Yes, even six times.

3002. If the common paddle produces 11 knots an hour, are you aware what would be produced by the feather paddle; is there any great difference?—Yes, there is. It would depend upon many circumstances relative both to the vessel and the engine as well as to the length of voyage; but I think one may, as an average, say that it would produce a difference of a knot an hour.

3003. Mr. *Currie.*] Has the feather paddle been used in Her Majesty's navy?—Only in the very fast packets.

3004. Is it used now?—Yes, in the best packets; on the Dover station they have them.

3005. Is there greater expense in attending them?—Yes, greater expense attends the feather paddle.

3006. Can vessels fitted with screw propellers sail and apply steam at the same time with advantage?—Yes; that has been established beyond all doubt.

3007. Can a paddle-wheel vessel do that?—Certainly not.

3008. Consequently there must be greater economy in working a screw propeller than a paddle-wheel?—Certainly.

3009. Do you think that there is a certain backwater which acts upon the screw?—That there must be some is evident from the fact of the apparent slip screw being so small as it is; but if I may be allowed to say so, I think that the manner in which the result is obtained is of no practical consequence. We must look at the facts derived from our experience of the working; theory does not go for very much.

3010. Does the ship run away from the screw?—Apparently it does, but not actually, of course.

3011. The screw is always at work?—Yes, it is always at work; always pressing. It is an extraordinary fact, and one that was not expected at first, that when a ship is under a press of sail, and she goes a good deal faster than she did before without the sail, the screw does not increase very much in velocity, and yet the pressure given out by that screw, as measured

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measured by the dynamometer, remains as great as it did before the vessel put any sail into operation.

3012. Do you know much about the feather screw?—Yes, I have seen it.

3013. Do you think it an improvement?—I should prefer the ordinary screw.

3014. Do you consider the lifting the screw out of the water an improvement?—That is essential, I think, with sea-going vessels.

3015. Are the Queen's ships always fitted with a spare screw?—Yes, they have always a spare screw on board.

3016. Do you know how long it takes to lift a screw out of the water?—It can be done in a small vessel in five minutes.

3017. And put back again?—Yes, it can be put again in the same time; it of course depends upon the kind of apparatus that may be employed to get the screw up.

3018. Does it signify what size the screw is?—The time occupied depends upon the distance you have to hoist the screw; a vessel having a great draft of water will have a screw of a greater diameter, and to get it out of the water it must be lifted a greater height, and it requires a longer time.

3019. Do you think a vessel of 1,700 tons would be able to lift her screw?—Certainly, screws are lifted in line of battle ships, where the screw and all the apparatus weigh seven or eight tons.

3020. Mr. *Berkeley.*] Cunard's steamboats having 800-horse power, is it possibte that that power could be increased to 4,800?—Not with the paddle-wheel.

3021. Do you think that with screw vessels the power might be increased in that ratio?—Yes; I said before that three times the ordinary power is very commonly obtained; it depends altogether upon the speed of the piston, and the pressure on the piston; the nominal power is measured in any way that people choose to adopt. As regards the measurement of the nominal power, there is no commercial rule that is invariable.

3022. Mr. *Currie.*] Are you acquainted with the performance of the "Banshee"?—Yes, very well.

3023. What is her nominal power?—350-horse power.

3024. What is her indicated power?—Nearly five times the ordinary power.

3025. That would be 1,600-horse power?—Yes.

3026. Then in fact the whole thing is very capricious?—No, the parties know what is to be done beforehand; if a person wants to get very high speed he must so arrange the proportions of the engine that he shall get a great velocity out of

of the piston; the size of the engine and the weight of the engine are not increased.

3027. Then it is not deceiving?—Not to those who understand the matter.

3028. But to the public at large it is?—Yes, it may be.

3029. Admiral *Bowles.*] The "Banshee" was built for a particular purpose, for very short voyages?—Yes.

3030. Where there was no necessity to economize coal?—Certainly.

3031. Are you of opinion that the voyage to Australia could be performed much more economically, as well as regularly, by screw vessels than by paddle-wheel vessels?—I have no question that economy would be on the side of the screw vessels.

3032. And, altogether, you consider that the auxiliary screw would be a very great advantage to vessels performing that voyage, and would enable them to perform the voyage with ergularity?—I think you can scarcely call screws at present auxiliary. Take for example screw engines of 250-horse power, and vessels of 1,400 tons; supposing those engines worked up to, say, between three and four times their nominal power, the proportion of the power to the tonnage would be nearly as great as in paddle-wheel vessels, which were called full-power vessels, had some years ago.

3033. Mr. *Berkeley.*] There was a question, which you replied to, which I wished to have some explanation upon. If the "Banshee" worked up to five times its nominal power, might not any other screw engine do the same?—There is no reason why it should not.

3034. But you said that paddle-wheels could not do so?—I said a screw vessel could have her power increased more readily than a paddle-wheel vessel, because, supposing you have boilers of sufficient power, or you think fit to put in powerful boilers, it is only to put on a screw of a less pitch, and thereby allow the engines to work faster, and the power is immediately increased; that cannot be done with a paddle-wheel vessel, because the diameter of the paddle-wheel cannot be altered.

3035. Mr. *Divett.*] Will you be good enough to define what you mean by the pitch of the screw?—The pitch of a screw is the distance between one thread and the following thread; that is to say, it is the distance which the screw would advance if it were working in a solid by one revolution. If you were to take an ordinary screw, and make it work in sand, the distance which it will have advanced in one turn will

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will be the pitch of the screw; and if that pitch is made less, which can be very easily done, because a screw is a very inexpensive instrument, the engines will go faster, and consequently more power will be realized. In a paddle-wheel vessel you have not the means of increasing the power in that way.

3036. The screws most in use now have two fans?—Yes.

3037. Are they found to be most efficient?—Three fans may be as efficient as two, but the two-fan screw is so very convenient to get up and down, and attended with so many other advantages, that unless the three-fan screw could show some decided superiority, I should say that the two-fan screw is the better one for general use.

3038. Mr. *Berkeley.*] Are you aware at whatever comparative expense of fuel the "Banshee" increases her nominal power five times?—The expense of fuel would be in proportion to the power realized.

3039. Admiral *Bowles.*] Are you aware that these vessels that have been spoken of are intended to be full-rigged sailing vessels, and consequently would be able to go much faster in a fair wind than any paddle-wheel vessels could possibly go?—Yes.

3040. Do you consider that a great advantage?—Yes, I do.

3041. Mr. *Corry.*] It has been stated that, with those vessels of 250-horse power that are proposed to be put on, the expense of coal would be 10 lbs. per hour per horse power, do you consider that that expenditure would be sufficient to work the engines up to four times their nominal power?—No, I think not.

3042. Up to what power would that expenditure work those engines?—In well-made engines about 4½ lbs. per hour for every actual horse power, would be the expenditure; that would be 9 lbs. per hour for engines working up to twice the nominal power; and 18 lbs. per horse power per hour for engines working up to four times the nominal power.

3043. Therefore 10 lbs. per horse power per hour would give a little more than twice the nominal power?—Yes, but that of course depends upon the quality of the coals. I am now taking average coals, such as we have in the navy.

3044. Mr. *Currie.*] In a screw vessel I presume you sometimes use the full power, and sometimes the half power, and in fact all varieties of power?—Yes, which is one great advantage in a screw propeller.

3045. Ten pounds per hour is the average throughout a long voyage; therefore they might sometimes use a smaller power

power than that, and sometimes a larger power than that?—Yes; 10 lbs. per hour I should consider a fair average, looking at the way in which such engines would be probably worked; for no person would be mad enough to expend coals at the rate of 18 lbs. per horse power per hour, if he could get 10 or 12 knots by the using sails alone. *T. Lloyd, Esq.* 20 May 1851.

3046. Mr. *Corry.*] In your opinion, an average expenditure of 10 lbs. per hour would enable the vessel to carry a higher pressure when she was contending against a gale or a head wind?—Yes.

3047. In a voyage like that to Australia, two-thirds of it is against the trade wind?—It would be economical in point of fuel, if the engines were only managed judiciously, to have them of high power; that is, if it were used only when great power was required.

3048. Mr. *Currie.*] In emergencies?—Yes.

3049. Is the action of the power very easily regulated?—Nothing is more easy; it is only to burn more coal; if you put more coals upon the fire, you get more power.

John Yates, Esq., called in; and further Examined.

3050–3062. Mr. *Cowper.*] HAVE you anything further to state?—There are some points which I was desired to give information upon at the former meeting of the Committee, and which I can now supply. The first is with reference to question 2602: the question was, "What length of time do you consider the voyage would occupy from Singapore to Hong Kong and to Shanghai?" The answer is, "I have not the distance before me at this moment; I will fill in the distance, if I may be allowed to do so." The answer to that question will be, that the course of post between Calcutta and Sydney would be as follows: Calcutta to Singapore, including 1 day's stoppage, 7 days; Singapore to Sydney, 20 days, remaining at Sydney 3 days; that would make the course of post from Calcutta to Sydney 57 days. The course of post from Calcutta to Hong Kong and Shanghai would be, from Calcutta to Singapore, 7 days; from Singapore to Hong Kong, 6 days; from Hong Kong to Shanghai, 4 days, remaining at Shanghai 3 days; that would make the course of post between Calcutta and Shanghai 37 days. The course of post from Sydney to Hong Kong and Shanghai would be, from Sydney to Singapore, 20 days; to Hong Kong, 6 days; to Shanghai, 4 days, remaining at Shanghai 3 days, which would make the course of post from Sydney to Shanghai 63 days. Question *J. Yates, Esq.*

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2618 was, "Are you prepared to give the two distances of the direct route from King George's Sound to Port Phillip, and from the same point passing by Adelaide?" The answer is, "I am not at this moment; I shall be happy to supply the distances." The distance from Albany to Adelaide is 1,020 miles; from Adelaide to Port Phillip is 505 miles, and from Port Phillip to Sydney is 602 miles, making the total distance from Albany to Sydney *viâ* Adelaide, 2,127 miles. By the sea route from Cape Leeuwin to Port Phillip and Sydnee direct, I estimate the distance at about 1,930 miles. The difference in distance would be as against the route *viâ* Adelaide, 197 miles, or about one day each way; but taking into consideration the circumstance of Adelaide being a place of considerable trade, and making large shipments to India, I should incline to think that it would be worth while to take that port into the direct line, although it would lengthen the voyage each way by at least one day. That line would also possess the advantage of saving one transhipment each way; it would not be necessary to ship from the mail steamer into the colonial steamer, as we otherwise propose to do. Question 2653 was put by Mr. Currie; he said, "There is a proposal by the company itself to do it" (that is, to make the voyage by steam) "in a certain number of days?"—My answer was, "Yes, allowing the rate of speed which the Screw Company claim for their vessels, there would be a difference of 13 days." Then I was asked this question: "You assume that your calculation is correct, and that the calculation of the Screw Company is incorrect?" I have referred to the letter to which Mr. Currie alluded; it is a letter addressed by Mr. Henry Currie, in his capacity of chairman of the General Screw Steam Company, to Sir Francis Baring, baronet, on the 26th of March 1851, and it is printed with the evidence. By that letter that company made an offer to maintain a monthly communication between England and Australia, *viâ* the Cape of Good Hope, in vessels of 1,400 tons, without any specification as to power; the voyage out to be performed in 64 days, at 8½ miles per hour, and the return or voyage home, at the same speed, in 68 days, which does not include any time for stoppages. The distance from England to Sydney, *viâ* the Cape, according to Captain Chappell's evidence, being 13,162 miles, at 8½ miles per hour, it would require 64½ days to perform the voyage; to which add, for stoppages, 3 days; making a total of 67½ days out. Returning home, 68 days; to which add, for stoppages, 3 days; making a total of 71 days home. Thus the voyage out would be

be 67 ½ days, and the voyage home 71 days. Allow for the course of post, as in the case of the Singapore route, 3 days; making the total course of post 141 ½ days. *Viâ* Singapore and Trieste, the length of voyage being 109 days, it follows that the difference, as in favour of the Singapore and Trieste route, would be 32 ½ days, or 28 ½ in favour of the Plymouth route. But as the distance home would be materially increased by having eight months in the year to come from Australia to the Cape, head to the wind, it is not unfair to assume that the homeward voyage would exceed the calculation made by the General Screw Company by from five to seven or eight days; so that, in point of fact, the difference in course of post between the Cape route and that *viâ* Singapore would be in favour of the latter by from 42 ½ to 50 days. I was asked by Mr. Bright, in Question 2695, "Can you state whether the first cost of the 16 ships will be more than 1,000,000*l.*?" My reply was, "I think, as nearly as possible, about that sum." My answer to that question is, that the estimated cost of 15 ships, which is what I should have said instead of 16 (for we had been calculating upon a smaller class of vessels than that, and from that arose the difference between 15 and 16), the estimated cost of 15 ships would be 1,012,500*l.*; that leaves a margin for working capital for coals and cash afloat, of 187,500*l.*

[*The Witness delivered in the Paper, which is as follows:*]

CAPITAL of the EASTERN STEAM NAVIGATION COMPANY:

60,000 shares, 20*l.* each - - - £. 1,200,000.

Estimated Cost of 15 Ships, with Duplicates, Stores, &c. (45*l.* per Ton, Ship and Engines).

				£.
3	1,500	500-horse power		202,500
4	2,100	600	—	378,000
4	1,200	400	—	216,000
4	1,200	400	—	216,000
				1,012,500
	Working Capital:			
Coal Hulks, Stations, &c.			£. 60,000	
Coals and Stores, afloat			50,000	
Ready Money			77,500	
				187,500
			£.	1,200,000

Exclusive of ready money from passengers, &c. &c.

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I was desired to give the route *viâ* Ceylon and Keeling's Island. The route *viâ* Ceylon, Keeling's Island, and Swan River to Sydney, taking Captain Chappell's distance from England to Point de Galle, would be 6,613 miles; from thence to Cape Leeuwin 3,129 miles, and thence to Sydney 1,985 miles; giving a total of 11,727 miles direct from England to Sydney. Deducting the crossing of the Isthmus, 207 miles, leaves a total of 11,520 miles sea voyage. That sea voyage would be performed by the vessels that we propose at the rate of 10 ½ knots an hour, in 46 days; crossing the Isthmus 3 days, and stoppages throughout 5 days; making the passage out 54 days; and it would be 54 days home. Allowing 3 days stay in Sydney would make the course of post 111 days *viâ* Plymouth, or (*viâ* Trieste) being 4 days less each way, 104 days. The same voyage being performed *viâ* Singapore by the shortest route in 109 days, it follows that making the voyage *viâ* Ceylon would only save one day each way, and it would be a line entirely destitute of traffic; whilst the route *viâ* Singapore is the high road to India, China, Java, and the whole of the Eastern Archipelago, between all of whom and Australia it is already in evidence that a very large amount of trade exists; besides which, by this route the whole of India and China would participate in the advantages of regular and rapid postal communication, and consequently it would realize the great object of the Indian and Australian community.

3063. Mr. *Corry.*] I asked you whether you could specify any vessel of 1,200 tons, and 400-horse power, which had maintained an average speed of 10 ½ knots an hour; and your answer was, "I think I can supply the Committee with the names of vessels that have done so." Can you now give the names of those vessels?—I have not been able to ascertain the names of the vessels, but I will refer the Committee to the evidence of Mr. Cunard, given before the Committee on the Packet Service in 1849. To a question put by Mr. William Brown, "What is their average speed?" the answer was, "Eleven knots an hour."

3064. Were not those vessels much larger than 1,200 tons, and was not their power great in proportion?—I think not at that time; it was at the time that they were making the new vessels; they were changing from 1,200 to 1,600 tons.

3065-66. Mr. *Willcox.*] In Question 2701 you were asked if your company had any objection to give in a list of its proprietors; to which you replied, "I am not prepared to say that any objection would be made; I have not authority at this moment

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moment to give it." Are you now prepared to give such a list?—I am not prepared with authority yet; for, yesterday being the day of arrival of so many mails, I could not get a Board, and therefore the question stands as it did. I think Mr. Willcox, at the last meeting of the Committee, cast some doubt upon my statement as regarded the rate of speed with which we profess to carry out the service as between England and India, or as between India and Australia. I have had this morning a letter put into my hand, which, with the permission of the Committee, I will read, which I think will set that question at rest. It is a letter addressed to the Chairman and Directors of the Eastern Steam Navigation Company, and is in these terms: "Gentlemen, I am decidedly of opinion that in proffering to convey the mails, with passengess, from Plymouth to Calcutta, and to Hong Kong, with a moderate quantity of measurement goods, at an average rate of steaming of 10½ knots per hour, you have kept cautiously within the bounds of that which is practicable with such machinery as that which you have detailed to me, and the description of vessels which you propose. It follows, that I feel perfectly assured that the sea distance between Plymouth and Calcutta, which I understand to be nearly 7,600 miles (nautical) will be run ordinarily by your vessels easily in 30 days, and at times sensibly within that period. For postal purposes, in all cases where the greatest distance between any two coaling stations does not exceed 2,200 miles, I am of opinion the eccentric paddle-wheel is the best propeller. I remain, gentlemen, your obedient servant, (signed) *John Penn*." Mr. Penn is an eminent engineer.

3067. Mr. *Mangles*.] Are you a nautical man?—I am not.

3068. How long has your connexion with steam vessels existed; or from what does your knowledge of steam vessels and steam matters arise?—From studying the question for the last 10 years.

3069. But you are not yourself a practical nautical man?—I am not either a sailor or an engineer, as I have already stated to the Committee.

Captain *William Watts*, called in; and Examined.

Capt. W. Watts.

3070. *Chairman*.] WHAT is your profession?—A Master Mariner.

3071. What vessels have you commanded?—I have commanded four, belonging to the General Steam Screw Navigation

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Company; the "City of Rotterdam," the "City of London," the "Sir Robert Peel," and the "Hellespont."

3072. How long have you commanded the "Hellespont"?—Eighteen months.

3073. How long have you been in command of screw steamers?—Four years and a half.

3074. Where have your vessels been principally?—In the North Sea, in the Mediterranean, and lastly to the Cape.

3075. Can you state the average speed, for the last twelve months, which the vessels which you have commanded have been able to maintain?—Eight knots and a half.

3076. In what seas?—In the Mediterranean and the Atlantic.

3077. What character of weather had you in the Mediterranean Sea?—Generally heavy weather in the winter time, and fine weather in the summer time.

3078. In the last passage to the Cape, what weather had you?—Partly fine; but in the homeward passage, in the latter part of it, we had rough strong winds and half gales.

3079. How do you find the screw work in heavy weather?—Very well; it is always efficient.

3080. With a heavy wind and a heavy sea, how do you work your ship; do you steam against it, or beat to windward?—We beat to windward.

3081. Mr. *Corry.*] With the assistance of the screw?—Yes.

3082. *Chairman.*] Have you ever had an opportunity of comparing the performance of a screw vessel with a paddle vessel in the course of your voyages?—Yes. I can mention one circumstance which, I think, will prove the superiority of the screw; it occurred in December 1849. We left Malta Harbour together with a Dutch paddle-wheel steamer; we were both bound to Gibraltar. While the "Hellespont" was in smooth water we went with the other vessel; but after the breeze freshened, the other vessel was obliged to set her canvas to beat to windward to make any way, and she was beating us a knot an hour. We set our canvas, and in three boards we came up with her, though we were three miles to windward of her at the time; the three boards did not occupy more than six hours.

3083. Was the Dutch vessel of about the same size and power as the "Hellespont"?—She was of much larger power than the "Hellespont"; she was 180-horse power.

3084. What was her tonnage?—Her tonnage was about 500.

3085. And

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3085. What is the tonnage and the power of the "Hellespont"?—Three hundred and fifty is her tonnage, and 80-horse power.

3086. Admiral *Bowles.*] What sail were you carrying?—Single reef, fore and aft.

3087. No square-sails?—No.

3088. *Chairman.*] Was there a heavy sea at the time?—Yes.

3089. And the wind was blowing very hard?—Yes.

3090. Mr. *Corry.*] How near the wind could your vessel go?—The wind was beating four points.

3091. Admiral *Bowles.*] How near the wind can you go with your square sails?—Six points.

3092. With the screw in action how near the wind can you go?—About five and a half points, or six points, the screw propelling a vessel forwards serves to bring her back a little.

3093. *Chairman.*] It makes a difference of a point and a half?—Yes, between square sails and fore and aft sails; you can bring the fore and aft sail to any flatness that you like.

3094. What is the difference between a vessel going as near the wind as she can with a screw and without it?—A vessel may sail within six points without the aid of steam, and she may sail within nine points with the aid of steam.

3095. Mr. *Berkeley.*] The vessel that you speak of was a Dutch vessel?—Yes.

3096. Do you remember the name of it?—The "William the First."

3097. When you met the vessel had you any opportunity of going on board her?—No.

3098. Are you aware whether her engines were English?—I believe they were not.

3099. How was she officered?—By Dutchmen.

3100. Was the engineer Dutch or English?—I cannot say.

3101. Mr. *Corry.*] Have you ever encountered very heavy gales of wind in a screw vessel?—Yes, several.

3102. Adverse winds?—Yes; in crossing the Bay of Biscay we had adverse winds.

3103. Has the screw, under all circumstances, worked satisfactorily?—Very much so; I have for four years and a half commanded screw vessels, and during the whole time I have not had a casualty which has stopped the vessel an hour, or which has obliged her to put into port.

3104. What was your average speed in beating dead to windward?—The least I made in the "Hellespont," dead to the wind, has been nine to four miles.

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3105. Do you think that vessels of 1,400 tons, with the auxiliary screw and engines of 250-horse power, would be able to contend against strong adverse gales and heavy seas? —I am quite certain of it; as far as my knowledge has gone, the auxiliary power would enable ships to lie to very easily; they would be always seaworthy ships.

3106. *Chairman.*] Have you sailed in the North Seas?—Yes, for two years.

3107. Have you met with strong gales in those seas?—Yes, frequently.

3108. Do you consider that in those seas a screw ship of the description that has been referred to, namely, of 1,400 tons and 250-horse power, would be able to maintain an average rate of speed of 8 ½ knots an hour, taking into consideration the chance of her meeting such gales?—Yes.

3109. And in the passage between England and New York, with the chance of meeting such gales, do you believe that such ships would be able to maintain an average speed of 8 ½ knots an hour?—Yes, I thoroughly believe it.

3110. Mr. *Currie.*] What is the greatest speed you ever attained under canvas?—I have attained the same maximum speed under canvas alone as under steam and canvas combined. I have attained 12 knots an hour under canvas alone, and I have attained 12 knots an hour under canvas and steam combined.

3111. Mr. *Corry.*] The horse power of the "Hellespont" was 80?—Yes.

3112. Was that the nominal power?—It was.

3113. Do you know up to what power those engines actually work?—No, I do not.

3114. Mr. *Mangles.*] Did I rightly understand you to say that such screw vessels as are proposed to be employed, would in your opinion average 8 ½ knots an hour against a gale of wind?—Not always against a gale of wind, but their average speed would be 8 ½ knots an hour.

3115. Admiral *Bowles.*] When you have gone under sails without steam, by the wind, what speed have you attained? —Nine knots is the greatest speed.

3116. Mr. *Corry.*] Have you any means of comparing the relative speed of your vessel in the Bay of Biscay with the speed of a paddle-wheel steamer?—I thoroughly believe that a paddle-wheel steamer would not have made the distance in the same time.

3117. Did any paddle-wheel steamer make the voyage at the same that you did?—Not to my knowledge.

3118. Mr. *Berkeley.*] When you say that you believe that a paddle-wheel steamer could not do the distance in the same time, you mean a paddle-wheel steamer of the same power?—No, of double the power.

3119. Mr. *Currie.*] Your meaning is, that a screw vessel with auxiliary power could beat to windward with the aid of her screw, and perform a greater actual distance dead to windward than a paddle-wheel steamer of full power could do steaming head to wind?—Yes, in very bad weather.

3120. Mr. *Mangles.*] Have you just returned from the Cape of Good Hope?—Yes.

3121. In how many days did you make the passage?—In 34 days 18 hours, including stoppages.

3122. What average speed is that?—An average of 8 $\frac{6}{100}$ths.

3123. *Chairman.*] On the two voyages, outward and returning, what was the average speed you made?—8·47.

3124. Mr. *Corry.*] You have stated that you have commanded four steam screw vessels, were those vessels all made of iron?—Yes.

3125. Do you give a great preference to iron, as a material for screw vessels?—Yes.

3126. For what reason?—You can get finer lines for the steamer to work with, and you can make them much stronger in the after body.

3127. Have you also more capacity in the stowing?—Yes.

3128. Did you ever find any inconvenience from furring?—No.

3129. How do you obviate that?—Certain patents have come out which obviate that. We have just returned from a three months voyage, and we do not find a particle of fur about the vessel.

3130. Whose patent is that?—I am not prepared to say.

3131. *Chairman.*] In what condition was the "Hellespont" on her return home?—In excellent condition; there was nothing on the bottom of her.

3132. She had gone for three months without being in dock?—Yes.

3133. Mr. *Corry.*] Was the "Hellespont" full rigged or jury rigged?—She was rather under-rigged than over-rigged; she had three masts.

3134. *Chairman.*] How soon would the "Hellespont" be ready for sea?—She could be ready in a week, if required.

Captain *George Hyde*, called in; and Examined.

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3135. *Chairman.*] WHAT is your profession?—I am a Sailor.

3136. Have you been in command of any merchantmen?—I have been in command of two.

3137. For how long a time?—For the last five years.

3138. How many voyages have you made in command?—Five passages.

3139. From what places?—From London to Adelaide.

3140. And returning?—Yes; but on the last occasion not in command; my vessel was wrecked at Adelaide.

3141. What is the character of the weather that you have generally experienced off the western coast of Australia?—I have generally experienced variable unsettled weather, and occasionally fresh winds; but never very bad weather but on one occasion.

3142. In what month have you made the voyage?—I have made the voyage in September, and in December, and in January.

3143. Do you mean the voyage out?—The voyage out and home too.

3144. What months do you consider the worst months in the year for making the voyage?—I should say from the latter end of May to the latter end of July; that is the worst time to arrive at Cape Leeuwin.

3145. Wre you going or returning during those months that you have named?—In September I was arriving; I was bound outward. On another occasion, in September, I was bound from Sydney to Calcutta; and in December and January I was always bound home.

3146. You have never made the passage during the months which are considered the worst period of the year?—No.

3147. Are you acquainted with any commanders of ships who have made the passage at that time?—With many.

3148. What have been their general opinions as to the weather to be met with in making the passage?—The general opinion is, that a ship may fall in with heavy weather, and may meet with a gale of wind, but that the average weather is such as almost any vessel could face.

3149. It has been stated by some witnesses before this Committee that the weather is very bad, and that they have very furious gales of wind from the westward for nearly nine months of the year; do you believe that to be the case?—I do not; I believe

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believe the gales do not blow home on the coast. We have rather heavy gales after we get to the southward of latitude 39 degrees to 48 degrees.

3150. What course do you take in the outward passage with a sailing-vessel in going from the Cape?—For the south-east trade I have generally gone to the northward of Tristan d'Acunha; I have rounded the Cape at from 40 degrees to 41 degrees, and kept in latitude 41 degrees to 44 degrees, till approaching the meridian of Cape Leeuwin, and then I have gone to the northward.

3151. What kind of weather do you generally experience in those latitudes?—In the summer season we have strong westerly winds, and in the winter season we have very heavy gales.

3152. On the return passage what course do you take?—I have always kept as near as possible to 35 degrees till approaching the meridian of Cape Leeuwin; and then, if the wind was northward, as it is very frequently, we sail to the westward, and the wind changing to the north-west, which it always does, and then to south-west tack to the northern, we go on the port tack up to the northward.

3153. In what latitude, on the return passage to the Cape, do you fall in with the eastern trade wind?—I can scarcely say that I have ever had any trade wind; I have had variable easterly winds; I think mostly from the north-east, but I can scarcely say that I have ever experienced any trade wind; the weather is generally light and fine weather.

3154. It has been stated to the Committee that in latitude 20 degrees, a vessel bound for the Cape would meet with the trade winds, which would carry her at the rate of 8½ or 9 knots an hour; have you ever been in that latitude?—I have in coming from India, but not in coming from Adelaide; it would be too great a loss of time to go that way. I should say that in 20 degrees you would scarcely get the strength of the trade wind. You must go up as high as 15 degrees at least, if you intend to take that route, but which I think quite unnecessary.

3155. How far to the northward would you go?—If I were making a passage from Adelaide, I should keep at from 27 degrees to 29 degrees.

3156. What sort of weather would you have there?—There I should experience fine weather, with occasionally strong winds from the northward, but never any very bad weather.

3157. In the return passages you have made from South Australia, have you always come round Cape Leeuwin, or have you

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you ever made the passage round Cape Horn?—I have never come from Adelaide round Cape Horn; I have from Sydney come round Cape Horn. I do not know any ships that take the passage from Adelaide round Cape Horn. I believe it has been done but very seldom.

3158. Do you believe that any vessels could make the passage round Cape Leeuwin at the worst season of the year?—Yes, many ships bound to India and Singapore make the passage in all seasons; even the smaller vessels of from 20 to 40 and 60 tons, come up from Hobart Town at all seasons.

3159. Do they take advantage of the bight, or do they steer across the bay?—Very few ships like to go far into the bight; they might go 20 or 30 miles, but they would not like to go far; they keep at 35 or 35 ½ to 36.

3160. Are there any difficulties in Bass's Straits?—I think there is no great difficulty; there is plenty of room except on the eastern side; on the eastern side it is rather narrow, but the western entrance is free from danger except the Harbinger's Reef; that must be approached with caution.

3161. Have you ever made the passage from South Australia to India?—Never.

3162. Then you cannot speak to Torres Straits?—No.

3163. Mr. *Corry.*] Have you had any experience of screw steamers?—No.

3164. Are you acquainted with the performance of any vessels of that description?—No, only so far as I have seen them moving about the coast; going to Ireland, and so on; and I believe they always answer exceedingly well.

3165. Is it your impression that a screw vessel of 1,400 tons and 250-horse power would have any difficulty in making the passage from Australia to the Cape in the worst season of the year?—I should say not the least, as far as I am capable of judging; my impression is that the screw will supersede the paddle-wheel entirely; it will be found, for long voyages, much more efficacious than the paddle-wheel.

3166. Mr. *Cowper.*] Is not the sea to the south of Cape Leeuwin an unusually long heavy rolling sea?—It is a long sea; but that is much better for a ship than a short chopping sea.

3167. Is it not a sea that would rather delay the speed of a steam vessel?—Every sea would have a tendency to delay a vessel if she were going towards it; but I should say the sea there would delay a vessel less than the sea in the English Channel.

3168. Are not sailing vessels that have to go round Cape Leeuwin from Adelaide constantly kept waiting before they can round

round Cape Leeuwin?—I believe they lose time very frequently; but on the average, much more from calms and light winds than from heavy gales of wind. Capt. *G. Hyde.* 20 May 1851.

3169. But still, would you not say that they are detained frequently by the force of the wind?—I should say, occasionally they are.

3170. Not very frequently?—More frequently by light variable winds.

3171. Mr. *Corry.*] What description of vessels are those?—Sailing vessels of all sizes, from 50 to 1,400 tons.

3172. Admiral *Bowles.*] What would you estimate the difference of the voyages outwards and homewards between the Cape of Good Hope and Bass's Straits, for screw vessels of 250-horse power and 1,400 tons?—It is difficult for me to speak of what the length of the passage of screw vessels would be, but as far as my experience would lead me to judge, I should say a screw vessel would make a quick passage between the Cape of Good Hope and Bass's Straits.

3173. Do you think she would make as quick a passage to the eastward as to the westward?—I think she would: on the outward voyage she would use her sails, and on the homeward voyage she would require the assistance of the screw.

3174. Would she not in going eastward have the assistance of the wind?—Yes.

3175. But in going westward she would have the wind against her as long as she was south of Australia?—Yes, as long as she was in 39 degrees to 40 degrees she would have the westerly wind; and after she had hauled to the northward of 37 degrees, and from that to 35 degrees, keeping as far north as she can, she will get variable winds and seldom heavy westerly gales.

3176. Would those winds, as she got to the northward, be of as much advantage to her as the westerly winds she would get on her way out to the Cape of Good Hope?—Certainly not.

3177. Why then do you think that she could do the return voyage as quickly as the outward voyage?—Because she would have the aid of steam, and she would require the aid of steam.

3178. Supposing on the voyage eastward she used the steam as well as her sails, might not she do the voyage more quickly than the return voyage?—Every ship has a certain speed beyond which you cannot force her to go; and therefore if you can sail a vessel 10 knots an hour, and she can steam 10 knots

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knots an hour without sails, it does not follow that she will go 20 knots an hour with the aid of steam.

3179. Mr. *Divett.*] Is there any difference between the distance you have to go in the outward and the homeward voyage?—I think it is nearly the same; the difference in time between the two would be very trifling; if anything the passage would be shorter home with the aid of steam power.

3180. *Chairman.*] You have stated in reply to questions that have been put to you, what you suppose the rate at which a screw steamer would be able to perform the outward and return passages from the Cape of Good Hope; what difference of time do you make in a steam vessel's outward and return passages?—The difference of time of the passages to and from Adelaide I have found to be very little; I have made the passage under four months to Adelaide, and something under four months in the return; that is in a sailing vessel.

3181. Mr. *Corry.*] Do you carry passengers in your ships from Adelaide to England?—Always.

3182. Do you find that passengers have any objection to performing the voyage by the Cape of Good Hope?—They prefer it to going round the Horn; many would not go round the Horn.

3183. Mr. *Divett.*] I believe the gentlemen pay sometimes extravagant prices for their passage by the Cape?—Yes; they did so when I came home.

3184. And there is some difficulty in getting a passage at at all?—Yes.

3185. Or they are sometimes obliged to take the passage in a ship that is considered dangerous?—Yes.

3186. Mr. *Currie.*] What was the size of the vessel you commanded?—The first was 390 tons and the last 514.

3187. Mr. *Wilson.*] Do none of the ships that come home from Adelaide come round Cape Horn?—I cannot say that none have ever come that way, but I am certain that none have come during my stay at Port Adelaide.

3188. It is only from Sydney that the practice is to come round the Horn?—From Sydney, Melbourne, and Van Diemen's Land vessels would lose a great deal of time in getting to the northward in coming round Cape Leeuwin, whereas a ship in Adelaide is in a position to come round Cape Leeuwin, Investigator's Straits being in latitude 35 degrees.

3189. Mr. *Mangles.*] What would be the difference between starting from Adelaide to the Cape of Good Hope and starting from Sydney to the Cape of Good Hope?—I should think the difference would be very considerable.

3190. As much as 14 days?—I should think quite that.

3191. Admiral *Bowles.*] That would be a ship dependent entirely upon sails?—Yes; vessels often experience heavy winds in latitude 40 degrees, whereas in latitude 35 degrees we have very fine weather.

3192. *Chairman.*] We have had it in evidence that vessels coming from Sydney take the passage of Cape Horn; what is the reason of their doing that?—Because of the delay they experienced in coming round through Bass's Straits towards Kangaroo Island.

3193. But you state that passengers from South Australia are desirous of going by the Cape of Good Hope?—The passage from Sydney is very different from the passage from Adelaide, because in coming from Sydney you have to come through Bass's Straits in latitude 40 degrees and 41 degrees, where you get the westerly winds; but in Adelaide we are in latitude 35 degrees, where we get quite different weather.

3194. Mr. *Divett.*] Are they building a lighthouse on the east end of Kangaroo Island?—They are intending to do so.

3195. Do they also intend to build a lighthouse on the west end of Kangaroo Island?—I believe they do; but the Straits can be entered with great safety, though the soundings are not laid down on a chart. I have beaten about there many days, and I have kept the lead constantly going, and I have found the soundings were very regular; this is to the westward of Kangaroo Island.

3196. You think the lighthouse is more required on the eastern end than on the western end?—That is for vessels bound from Sydney. I think the most useful place for a lighthouse would be on the south-east Cape of York's Peninsula, turning up to Adelaide. There is very little difficulty in going up the Straits.

3197. The object of putting a lighthouse there is to prevent ships from running on Trowbridge Shoal?—Yes.

3198. Mr. *Cowper.*] Can you state the difference that you would calculate between the homeward and outward voyage between the Cape and Sydney, with sailing vessels?—The difference of time with sailing vessels would be very considerable. I should think a sailing vessel from the meridian of the Cape of Good Hope to Adelaide might perform the passage very well in about 28 to 35 days. But a vessel going from Adelaide round Cape Leeuwin to the Cape of Good Hope, I should say, would have a fair passage if she did it in 50 days.

3199. To Sydney, what would be the difference in the length

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length of the passage?—If she came round the Leeuwin, it would be very considerable.

3200. Do you think it would make a difference of a fortnight?—Not with steam power; it would with a sailing vessel very likely make that difference.

3201-2. With a screw vessel, at what would you estimate the greater delay in regard to the homeward voyage?—I should think probably it would make a difference from Sydney of five days, or even more. It depends entirely upon what the vessels would do.

3203. Mr. *Scott.*] Do I understand you to say that a vessel having the auxiliary power of the screw would be five days less upon the voyage between Sydney and the Cape Leeuwin than a vessel without the auxiliary power of the screw?—I should think so, or even more than that.

3204. Mr. *Wilson.*] Did you not say that you considered that the time occupied in the outward voyage to Adelaide was nearly the same as the time occupied in the homeward voyage?—Yes.

3205. But you have just stated that the length of the outward passage from the Cape to Adelaide might be taken at from 28 to 35 days; but that the homeward voyage from Adelaide to the Cape would be a good voyage if performed in 50 days?—Yes; then we always make a quicker passage from the Cape home; that is where we make up the time; we always run much more quickly in coming home than in the outward voyage; we save a considerable time in sailing from the Cape to the English Channel in crossing the Line, and having better winds.

3206. Are there not steamboats running from the Cape to Sydney?—There was one, the "Juno," but she is taken off.

3207. Do you know what time she took in making the passage?—I do not.

3208. What was the character of that ship?—She had seen a great deal of service at home before she was sent out there.

3209. Mr. *Divett.*] You have been to the Mauritius, have you not?—I have.

3210. What would be the difference in time between the passage from Adelaide to the Cape, touching at the Mauritius, and the direct passage?—I should think the difference would be considerable, and the risk would be greater on account of the hurricanes, which we always endeavour to avoid; we endeavour to keep in latitude 29 degrees to 30 degrees in passing the Mauritius, to avoid those hurricanes.

3211. Have

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3211. Have you ever encountered those hurricanes in the passage home?—Never.

3212. In what latitude do you fall in with those hurricanes?—They rage with the greatest force from about 7 degrees to 23 degrees latitude. They are occasionally experienced in latitude 30 degrees and 31 degrees, but never with the same strength.

3213. *Chairman.*] In your passage from England to Australia have you ever taken the course of not touching at the Cape, in order to obtain the advantage of the Great Circle?—I have never called at the Cape on my outward voyage to Adelaide, as it would cause a loss of from 14 to 20 days; in my last voyage I went round Gough's Island.

3214. What difference do you consider that makes with a sailing vessel?—The difference in distance is considerable; it is from 700 to 900 miles; but I think a vessel would make as good a passage in 45 degrees, the extra risk in taking the Great Circle would not be compensated by the time saved.

3215. The wear and tear would be much greater?—Yes; and the weather is exceedingly bad; you have very damp and foggy and unhealthy weather.

3216. Mr. *Corry.*] Would the additional five days, which you think would be required on the return home from Sydney to the Cape, be occasioned by the difficulty of coming round Cape Leeuwin, or by the difficulties between Cape Leeuwin and Sydney?—Between Kangaroo Island and Sydney, till you get northward of latitude 40 degrees, you have strong westerly gales; to the northward of that latitude they are less certain and less regular.

3217. The whole loss of time you estimate as attributable to the passage between Kangaroo Island and Sydney?—The loss of time there would be considerable.

3218. Would the difference of time, as between Kangaroo Island and Sydney on the outward and homeward voyage, be five days?—I think it would be more; I think probably a steamer might come round from Sydney to Kangaroo Island in almost every case in about six or seven days or less. I speak from the observation of steam vessels that I have seen.

3219. Taking the passage from the Cape of Good Hope to Cape Leeuwin, and back again from Cape Leeuwin to the Cape of Good Hope, what difference do you suppose there would be in the time?—A steamer would, I think, do it in the same time.

3220. Mr. *Cowper.*] You have stated that the difference you have observed between the outward and homeward voyage between the Cape of Good Hope and Adelaide, might be taken as

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as a difference between 28 and 35 days on the one side, and 50 days on the other; will you explain what the causes are which contribute to render the outward voyage quicker than the homeward?—I am speaking of sailing vessels; in the homeward voyage, after hauling to the northward, we have very light and variable winds; in my last voyage from Adelaide in command, out of a passage of 110 days, for 35 days we averaged only 40 miles a day.

3221–22. Mr. *Scott.*] You stated in answer to a former question that the delays to the westward of Cape Leeuwin were owing to calms rather than to heavy winds?—Yes.

3223. And that when you got to the northward of latitude 40 degrees, vessels would not experience the heavy winds in their way home?—I did not say that they would not experience them, but the great detention I have found has been from the lightness of the winds during the cessation of the westerly breezes; I cannot call them westerly gales.

3224. You have no experience of steam vessels to enable you to say that they would take a fortnight more in coming homeward than in going out?—Not at all; on the contrary, I think steamers would make the homeward passage as quickly as the outward passage, or even more quickly. I speak from my experience of the passage from Adelaide to London; with the experience I have had I can speak with very great confidence of sailing vessels, but not of steamers; in going from Sydney the detention in going through Bass's Straits would be considerable.

3225. *Chairman.*] Did you state that steam vessels would perform the distance in five days less than sailing vessels?—I stated that if a sailing vessel was 14 days in coming round, a steamer might, I thought, do it in five or six if she was a properly constructed vessel; but it is a passage that I am not very well acquainted with, for I have been only twice that way; I speak more confidently of the passages I have made.

3226. Admiral *Bowles.*] Do you entertain any doubt that a vessel fitted with the auxiliary screw would make a voyage out and home again with regularity, at the speed of 8½ knots an hour?—With such vessels as are proposed, I think there can be no doubt of it.

3227. *Chairman.*] What average speed do you generally make in a sailing vessel?—The average speed of the sailing vessel I have commanded has been about 5 knots an hour; I have generally been on the outward voyage from 112 to 120 days, and on the homeward voyage the same; I have made my voyages home with great regularity.

Captain *John Lane*, called in; and Examined.

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3228. *Chairman.*] WHAT profession do you belong to?—Master Mariner.

3229. Have you commanded any vessels on the southern coast of Australia?—My last voyage was from London to Adelaide and Port Phillip.

3230. When did you make that voyage?—I started in November 1849, from Plymouth.

3231. When did you leave Port Phillip?—I left Port Phillip in the early part of June.

3232. How long were you making the return passage?—I went from Port Phillip to Colombo, in Ceylon; I was about six weeks in going from Port Phillip to Colombo.

3233. What was the character of the weather you experienced on the south-western coast of Australia?—Very fine; it was indifferent weather till we passed Kangaroo Island, but after we passed Kangaroo Island the weather was very fine.

3234. Have you heard Captain Hyde's evidence?—A portion of it.

3235. Do you agree with him as to the character of the weather that is usually experienced off the south-west coast of Australia?—I made two return voyages to India from Australia; one some years ago, and the last was in June, and the weather which I found there, on leaving Port Phillip for Colombo, I considered very fine; not anything like so bad as I expected to have met with.

3236. When you went some years ago, in what month did you go?—The month which I went then was in August.

3237. June is considered one of the winter months?—June is considered one of the worst months of the year. June, July, and August are the worst months.

3238. At what period are the winds strongest on that coast?—After passing Kangaroo Island, I got in upon the coast of South Australia; in a bight there, I had occasional land and sea breezes, and very smooth water.

3239. You had no severe gales on the passage?—Not any. There was no day that I was coming round till I got to Cape Leeuwin, which was 21 days from Port Phillip, but what I made ground.

3240. Is it a passage that is commonly made by coasting vessels?—Very often.

3241. During the winter months?—During the whole year.

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3242. Have you had any experience of steam vessels?—I once commanded a ship that was fitted with steam as an auxiliary power.

3243. Where did you command that vessel?—From London to the Mauritius.

3244. Did you make a return passage as well as an outward passage?—I made four passages; two voyages.

3245. You were in command of the vessel?—I was.

3246. Have you seen the proposals that have been made by the Screw Navigation Company?—I have not.

3247. They propose to perform the passage from England to Sydney by the Cape of Good Hope with vessels of 1,600 or 1,700 tons, and from 250 to 300-horse power. Do you believe from your own knowledge of what a screw vessel is capable of doing, that they could perform the distance at an average speed of eight and a half knots an hour?—I think that they would be able to accomplish that very easily.

3248. What was the proportion of power to the tonnage in the vessel you commanded?—The tonnage was 443 tons, and the power was 30-horse, two 15-horse.

3249. Do you recollect what speed you averaged in that vessel?—In a calm four and a half knots an hour; she was rigged as a barque.

3250. Did you experience any heavy weather when you were in command of her?—Yes.

3251. Did you on that occasion use steam, or did you beat to windward?—The steam power which was applied to that ship was not a screw; there were paddles on the side of the ship fitted by Messrs. John and Alfred Bligh; it was a paddle, but without the box.

3252. Mr. *Corry.*] Were those propellers similar to the "Vernon's"?—No; the construction was the same, but on the outside of the ship we had the means of raising and depressing the wheels; we had the means, when the ship heeled over, of lifting the wheel on the lee side about four feet, and of lowering the wheel on the wind side about four feet, so as to keep the wheels always in the water.

3253. Mr. *Chancellor of the Exchequer.*] In that way you get the full advantage of both paddles?—Yes; we never have the wheel on one side out of the water and the wheel on the other side immersed entirely in the water.

3254. *Chairman.*] In meeting a heavy wind, do you bear your vessel dead to the wind?—The power of our engine was not sufficient to enable her to bear up against a head wind. We set our fore and aft sails, and we used to carry our topsail at

at the masthead, and set our gallant and royals, because we could brace them so much more than we could our topsails; and with the fore and aft sails we might go within about five points of the wind, and then possibly might make 6 ½ knots an hour. I have seen her go seven knots an hour, with canvas and steam going at the same time.

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3255. Mr. *Corry.*] Could you work the paddles in very heavy weather?—They were not intended for heavy weather; they were only intended to be made use of in light weather. I think the construction of the paddle is peculiar; it is that of Messrs. John and Alfred Bligh, of Limehouse.

3256. Mr. *Scott.*] Has such a paddle been applied to a vessel of larger tonnage?—I believe it was never applied to any vessel but that one.

3257. How old is that vessel; what voyages has she made?—She was constantly sailing between London and the Mauritius.

3258. For how many years?—I was in that ship myself for nine years, and during those nine years made 19 voyages.

3259. Is it your impression that many apprehensions are entertained, by the coldness of the weather to be experienced in rounding Cape Leeuwin?—I cannot conceive that there can be any apprehensions entertained; if you were on the spot, you would see vessels of all sorts going round Cape Leeuwin; there can be no difficulty in their going round, for those vessels manage to go round constantly the whole year through, from Adelaide up to King George's Sound and Swan River.

3260. Then you think the evidence which has been given before this Committee, as to the apprehensions upon that point, is not to be relied upon, as far as your experience goes?—As far as my experience goes in passing and re-passing Cape Leeuwin, I think there is nothing to prevent even such steam vessels as I have seen trading from London to Rotterdam, making a very good passage round Cape Leeuwin, let alone the larger ones; near the coast the water is smooth.

Arthur Anderson, Esq., a Member of the House; Examined.

3261. *Chairman.*] ARE you a Managing Director of the Peninsular and Oriental Steam Navigation Company?—I am.

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3262. We see from certain documents which have been presented to the Committee, that several proposals have been made to Government by the Peninsular and Oriental Com-

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pany, for establishing steam communication with Australia? —There have.

3263. Will you state the particulars of those proposals, confining yourself as much as possible to the portion of the line between Ceylon and Singapore and Australia, as the Committee wish as much as possible to keep separate and distinct the question of the communication with India?—I will do so. The directors of the Peninsular and Oriental Steam Navigation Company have made four separate proposals to the Government for establishing a communication by steam with the Australian colonies. I will read to the Committee the first proposal that they made. It is dated on the 17th of July 1848. It was addressed to Earl Grey, as Secretary for the Colonies. This, I may observe to the Committee, was a volunteer proposal on the part of the Peninsular and Oriental Steam Navigation Company; it was done partly in consequence of a report which had gained some credit with the public, that the Peninsular and Oriental Steam Navigation Company were opposed to carrying out such a communication with Australia. The company therefore being pressed by several parties connected with Australia, thought it proper to make this tender to the Government. This is a letter written by the secretary of the company. "My Lord,—I am instructed by the Board of Directors of the Peninsular and Oriental Steam Navigation Company, to acquaint your Lordship that several influential parties connected with Australia and New South Wales, have again lately urged strongly upon this company the propriety of opening a communication with Her Majesty's Government upon the subject of procuring for those distant and highly important colonial possessions of the British empire the benefits to be derived from connecting them with England and India by means of a mail steam-packet service. The directors are aware that for a long period measures for this object have been warmly pressed upon the attention of Her Majesty's Government, on the grounds of the important advantages it would confer upon the mercantile interests of Great Britain in general, and upon those connected with the colonies in question in particular; and the directors have been assured that Her Majesty's Government have favourably considered the subject, not only upon those grounds, but also from being impressed with the importance, in a political point of view, of carrying such a measure into effect, and that it has only been delayed in consequence of the present financial position of the country. From the fact of this company having a large fleet of 11 steam ships employed in

in the East Indies and China, and an organized establishment of coal depôts, workshops, docks, and other materiel, already involving an outlay of 600,000*l.* for maintaining the mail service in that quarter alone, it has been naturally looked to by the public as the most favourable channel through which this desirable measure could be obtained at the least possible expense to the country, and probably at less hazard to its proprietary than to a new company, if such could be formed for the purpose, unavoidably deficient as the latter must be in the experience so much needed to render the undertaking creditable and effective. This question has fully engaged the attention of the directors, and they have for a long time past collected information upon the subject. In reference to the annual expense required for maintaining efficiently a regular monthly mail steam-packet communication between Sydney and Singapore, they are enabled to speak with some confidence; but it appears impossible to arrive at any approximate calculation of what the probable receipts of the conveyance of passengers and goods would be, so as to diminish the cost of the service; and those parties who might be supposed to afford some correct information upon the latter head differ so widely in their views that it would be hazardous to venture even the expression of an opinion on that important branch of the question. Under such circumstances the directors respectfully submit that the most prudent course of proceeding would be to open the line of communication by steam vessels with Australia, as an experiment, for 12 months; and the accompanying Paper, No. 1, contains a plan and proposal upon the subject. It is estimated that the working expenses, such as coals, wages, &c., for six voyages, would amount to about 29,800*l.* independently of providing the two steam ships required for the service, which it is proposed shall be procured by hire for 12 months, instead of purchasing vessels for the temporary service, which would involve a very heavy additional outlay. In laying these suggestions before your Lordship, I am desired by the directors to state that they have not been actuated by the desire to extend the difficult and anxious service in which they are already engaged in the eastern seas, which is already attended with much risk and responsibility; but the subject having been so strongly urged upon them, on the grounds already stated, and from so many different quarters, they felt there was no other course for them to pursue than to offer to render available for the object in view the services of an already established concern; and they trust that your Lordship and Her

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Majesty's Government will recognize that, in the plans herewith submitted, the directors have been influenced by a disinterested spirit, so far as this company is concerned." Then there follows a postscript: "The directors beg respectfully to intimate that copies of this letter and proposal are forwarded to the Lords Commissioners of the Treasury and of the Admiralty, for the information of those departments." Then there follows the proposal, which was enclosed in theletter. It is, "No. 1, Plan and Proposal for extending the Mail Steampacket Service from Singapore to Sydney, in 1849.—The line between Singapore and Sydney to be opened experimentally in 1849 for 12 months, by two chartered steam ships, of not less than 250 horse-power, capable of carrying fuel for at least 1,200 miles, and therefore of not less than from 700 to 800 tons each. The Lords of the Admiralty to advertise for tenders for two such ships; and that the choice of the vessels and decision upon the tenders shall rest with their Lordships. That the Peninsular and Oriental Company shall undertake, free of any charge for agency or management in London, the conduct of this experiment for 12 months, during which time six voyages between Singapore and Sydney (or one for every two months), may be performed by the two chartered ships; and that the directors shall consent that no commission for agency shall be charged by any of the existing agents of the Peninsular and Oriental Company, at any foreign agency, during the period of that experiment. That, for the purpose of trying this experiment, during the preliminary arrangements, Her Majesty's Government do give the requisite aid towards forming and protecting three depôts for coals at such points as may be considered suitable, to enable vessels of 800 tons burthen to be employed. Three stations (independently of Singapore and Sydney) will be necessary for this purpose, otherwise much larger and more expensive vessels would be required to carry a larger quantity of fuel for the greater distance, and the expense of navigating vessels so much larger than would otherwise be required, would greatly increase the expenditure without any increased return or receipts for passengers. Her Majesty's Government may, if they think fit, appoint one or two competent officers to accompany the two ships, who shall have every opportunity afforded them of ascertaining all the expenses incurred during the time specified, and also to satisfy Her Majesty's Government that proper exertion is made by the agents, and to procure passengers and freight for the ships, in order to reduce the expense of this experiment; and that those

those officers shall report fully to the Lords of the Admiralty the results of each voyage; the information thus to be acquired will enable Her Majesty's Government to arrive at correct data, and to ascertain what annual amount of mail-contract money will be required for maintaining, with efficient vessels, a regular monthly steam communication, for the object in question, under a mail-contract, hereafter. When the six voyages shall have been made, and the profit or loss consequent on the experiment shall have been ascertained, the amount of such profit or loss shall be divided in the following proportions: one-third to Her Majesty's Government, one-third to the colonial government, and one-third to the Peninsular and Oriental Company. It would be proper to stipulate that the service shall then be put up to public tender for 10 years; and, that in the event of a loss having been sustained, in this experimental undertaking (which is more than probable), it shall be a condition that whoever obtains the 10 years' contract shall be bound to repay to the Peninsular and Oriental Company the amount of the said one-third of the loss incurred by the company in making the experiment referred to." That was the first proposal that was made to the Government; and the Committee will observe, that in the subsequent one the last condition, of repaying the Peninsular and Oriental Company for any loss that might be incurred, was withdrawn. There was no answer received to this proposal. Subsequently advertisements were issued, calling for tenders for the performance of the service, stipulating that the route should be by Torres Straits; this is a letter that was sent by the secretary of the Peninsular and Oriental Company to the secretary of the Admiralty, in answer to that advertisement: it is dated, "November 2d, 1848. Sir, In consequence of the advertisement issued by the Lords Commissioners of the Admiralty, calling for tenders for establishing a steam communication for mails and despatches between Sydney and Singapore, I have the honour, by order of the directors of the Peninsular and Oriental Steam Navigation Company, to submit to you, for the consideration of their Lordships, the following proposals: 1st. The directors beg leave to refer to a proposal for an experimental opening of the desired communication, made by them, under date 17 July last, to Her Majesty's Secretary of State for the Colonies, a copy of which I have the honour to transmit herewith, marked A. As the directors have not yet been favoured with any reply to that proposal, and are consequently ignorant of the intentions of Her Majesty's Government in respect to it, they now

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beg to repeat their willingness to abide by it; and also to state that they are willing to modify it, so far as to withdraw the condition that an indemnification for the company's proportion of any loss which may be incurred in making the experiments, shall be made to this company in case any other party shall succeed in obtaining a contract in public competition for the permanent execution of the contemplated service. 2d. The directors respectfully decline to make any tender for performing the service by means of schooners, with auxiliary power and screw-propellers, for the following reasons: having given a close attention to the performance of such vessels on long voyages, they feel convinced that any attempt to maintain by such means an efficient postal communication with Australia would prove a failure, would consequently create dissatisfaction among that portion of the public interested in obtaining an improved communication with our important colonies in that quarter, and would compromise the reputation which the directors trust this company has earned by an efficient performance of the contract mail service, during a perion of upwards of 11 years, that they have been connected with it. As the Sydney steamers would necessarily be only a branch line in connexion with the main line, from China and India, a tolerable certainty of arrival at Singapore, so as to be able there to transfer the mails, to the corresponding homeward bound steamer from China, would be indispensable to the maintenance of an efficient postal communication with Sydney. An auxiliary power screw vessel, to have any chance of ensuring this certainty of arrival at Singapore, on a voyage of 4,460 miles, would require to start from Sydney a fortnight or three weeks earlier than a full power efficient paddle-wheel steamer would require to do; this would, to a great degree, neutralize the advantages of the proposed communication, and render it little better than the existing means of communication, *viâ* the Cape of Good Hope. On the other hand, should the auxiliary screw-vessel delay her departure from Sydney until about the time that a full power paddle-wheel steamer would start, it is probable that in the greater number of trips she would fail to overtake the homeward-bound steamer from China at Singapore, and thus a whole month would be lost; similar derangements would occur on the outward route. 3d. The directors have, therefore, deemed it expedient to limit their tender to the performance of the service by efficient full power paddle-wheel steamers, as specified in the printed form of tender herewith sent, and they beg to submit for their Lordships'

ships' information their estimates, upon which they have calculated that an annual sum of 60,000 *l.* will be required to remunerate the company for the performance of the service in the manner they propose, which will be found in the accompanying paper marked (B). On referring to these estimates it will be seen that the expense of forming and maintaining floating coaling depôts at Cape York and Sandy Cape, the annual cost of which is estimated at 6,000 *l.*, has not been included; the directors, considering that through the employment of convicts and small military detachments, for their protection against the aborigines in the vicinity of those localities, coaling establishments on shore may be maintained at a less cost by Government. Should Her Majesty's Government, however, decline to take under its charge the establishment and maintenance of such coal depôts, the directors will be compelled to add to the amount of their tender the said sum of 6,000 *l.* It will also be observed by the papers referred to that the directors have estimated the probable annual sum to be realized from traffic in the conveyance of passengers, &c., at 10,000 *l.* With reference to this item, they beg leave to observe that although for a period of nearly two years, during which the establishment of steam communication with Australia has been pressed on public attention, they have devoted much of their endeavours to the obtaining of authentic information on this very essential point; such has been the discrepancy of opinion of persons apparently competent to judge of it; that the directors do not feel themselves warranted to make any higher estimate of that branch of income. They are, however, ready to admit a condition in the contract, that their Lordships' agents in the contract steamers shall have the means afforded to them of ascertaining the earnings of those vessels from passage money and freight, and that a separate account shall be kept by the company for this branch of their operations, and that after deducting all fair expenses attaching to it, together with the 26 per cent., as estimated for repairs, depreciation, insurance, and interest on capital, the surplus, if any, shall be deducted from the amount to be paid by the public for the conveyance of the mails. On the other hand, the directors will stipulate for the option of determining the contract on giving six months' notice to that effect, should the service prove unremunerative to the company on the terms herein proposed. The directors observe a condition not hitherto introduced into contracts for the mail service inserted in the "Conditions," upon which tenders for this service are invited, namely, "That the quarterly

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terly payments are only to be made on production of certificates from the proper officers that the contract has been strictly and punctually performed." The directors respectfully decline to admit this condition. The directors desire me further to state, that should any other party propose to undertake this service, on terms which their Lordships may consider more advantageous to the public than those which the directors have herein submitted, this company will be willing to co-operate with such party, through the means of its established lines of communication between Singapore, India, and England, assuming that such party will possess the means and experience necessary to ensure an efficient establishment, and maintenance of the proposed communication. I have, &c. (signed) *C. W. Howell*, Secretary." Here follows the printed tender, in the usual form, containing the names of the ships. The two subsequent proposals are very short. The third is dated the 13th of January 1851, which was in answer to a tender put forth with a view to establish an Australian line of steamers, in combination with other lines, connecting it with India and China, and also with the mother country, forming a communication for passengers and goods, as well as the mails. This is the proposal upon which originated the correspondence which has been before the public, between the Government and the East India Company.

3264. Is the tender to which you refer the tender of the 22d of January 1850?—Yes. This is a letter which was dated subsequently. As part of the communications relative to that offer, had taken place in a kind of semi-official manner, it was thought proper that we should put on record the modifications of the proposals which we had thus made. This is dated the 13th January 1851, and addressed to the secretary of the Admiralty. "Sir, With reference to my letter of the 22d January, last year, submitting, by order of the Directors of the Peninsular and Oriental Steam Navigation Company, a proposal for establishing a steam postal communication with Australia, in combination with other lines of steam intercourse therein specified, I have now the honour to address you, for the information of the Lords Commissioners of the Admiralty, the following communication. The correspondence in reference to this subject, published by order of the House of Commons, having shown that a difficulty existed as to the carrying into effect simultaneously the whole of the plan proposed by this company, in consequence of the unwillingness of the East India Company to relinquish the line of postal communication between Bombay and Suez, carried

carried on by vessels of the Indian navy, the directors of this company, in order to obviate that difficulty, intimated their willingness to postpone the commencement of that part of their plan until such time as Her Majesty's Government should be in a position to deal with that branch of the service. In the mean time they proposed to establish, with all practicable speed, the communication between Singapore and Australia, and the other part of their plan, for which they had vessels ready. This proposal not having met with acceptance, and difficulties still appearing to the directors to exist, on the part of the East India Company, they more recently again intimated to Her Majesty's Government their willingness to establish the desired communication with Australia, in connection with a line of steam-vessels to ply between Calcutta, Penang, Singapore, and Hong Kong, to be arranged so as to afford a twice-a-month postal communication between this country and China, and a direct steam communication between Bengal, the Straits Settlements, China, and Australia, excluding the Bombay and Suez service altogether from their proposal. And they offered to undertake the specified service, at a mileage rate of 6*s* 3*d*., being exactly *pro rata itineris* to the sum which they required for executing the whole service embraced in the original plan. As the proceedings of this company, in reference to the object in question, have been already the subject of considerable public misrepresentation, and the question of steam communication with Australia appears to be destined to further protraction and public discussion, the directors feel it to be their duty, in justice to their constituents, to place on record the circumstances herein stated, the suggestions and proposals referred to having been communicated non-officially to a member of the Government. I have, &c., (signed) *C. W. Howell*, Secretary."

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3265. Has there been any communication since that with Government?—Yes. This is a proposal that was made in the answer to an advertisement which was subsequently issued by the Government; it is dated the 13th of February 1851, and addressed to the Secretary of the Admiralty: "Sir, With reference to the advertisement of the Lords Commissioners of the Admiralty, inviting tenders to be lodged this day for establishing steam communication between Singapore and Sydney, I have the honour, by order of the directors of the Peninsular and Oriental Steam Navigation Company, to state that they are willing to abide by any of the proposals which they have already submitted to their Lordships and Her Majesty's

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Majesty's Government for that object; also to add, that they are willing to undertake the communication between Singapore and Sydney, for which they have vessels ready, unconnected with any other service, on the terms recommended by the Committee of the House of Lords, Session 1847, to be adopted in mail packet contracts, namely, that the company shall receive the postage of all letters which may be conveyed by their vessels on the proposed lines, it being assumed that such postage shall be at the rates now established for colonial packet postage, namely, not less than 1*s.* per single letter not exceeding half an ounce in weight, and so on in the usual proportion. I have the honour to be, Sir, Your most obedient servant, (signed) *C. W. Howell*, Secretary." To which the following answer was received, dated the 4th of April 1851: "Gentlemen, I am commanded by my Lords Commissioners of the Admiralty to acquaint you that they decline accepting the tender made by you on the 13th February last, for the conveyance of mails between Singapore and Sydney. I am, Gentlemen, Your very obedient servant, (signed) *J. Parker*. To the Peninsular and Oriental Steam Navigation Company."

3266. That is the last communication that has passed?—Yes.

3267. In the event of this tender having been accepted, by what route did you propose to carry out the communication?—We proposed to take the western route between Singapore and Sydney both outwards and homewards.

3268. Will you state the reason why you have come to that determination?—The reason why we came to that conclusion was, that that route, supposing it to be practicable as regards navigation, would give the greatest benefit to the colonies as well as connect them more readily with China and India.

3269. Will you state to the Committee the mode in which you mean to effect the communication?—We propose to start from Singapore on the arrival there of the outward steamer with the China mails, which would also bring the Australian mails; we propose to receive the Australian mails in a vessel which would be kept ready there, and proceed for Australia, touching at Batavia, touching also, in case of need, for coals, at a place near Sharks Bay; we also propose having a coal depôt at the entrance of Swan River, at a small island there; we propose having another coal depôt at Saint George's Sound, and then we propose touching at Adelaide and landing the mails there, touching at Port Phillip and landing the mails there; and a branch steamer, which we presume would be provided

provided by the local authorities, would take the mails for Van Diemen's Land from Port Phillip, and proceed with them to Launceston, and wait for the return letters from Van Diemen's Land, and meet the returning steamer from Sydney at the same place, viz., Port Phillip, our terminus being Sydney. The homeward route would be the same, touching at the same places.

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3270. How many days would you allow to each of those ports?—At the coaling ports we propose allowing 24 hours, and at the other ports a shorter time; a few hours; we leave it to experience to determine the number of hours, more or less.

3271. With reference to the communication which you propose to give to the different colonies, how long would you propose to allow at Adelaide and Port Phillip?—We propose to deliver the letters out, receiving any intercolonial passengers that might wish to proceed from one part to another, or any letters and goods, and then we propose to return again and take the homeward letters, &c. for India, China, and England, on the return route from the different colonies.

3272. How long do you propose to allow at Sydney?—We reckon that for about five or six days the vessel would be at Sydney. The same outward steamer that brought the mails would not be the return steamer, because we must have an extra vessel, so that if anything happened to the outward vessel we might not detain her, and the homeward mails fail on that account.

3273. How many vessels do you consider that the service would require?—Four.

3274. Have you made any calculation as to the time the passage would take from Singapore, allowing for your stopping at those various ports and at Sydney?—The estimate that we proceed upon is based upon rather a moderate calculation of the speed of the vessels, viz. 8 ½ knots an hour. We proposed to do this service with certain vessels which we could then immediately command as a preliminary means, and to carry out the service afterwards by vessels of more recent construction and greater speed. But basing it upon that rate of speed, the length of the passage between Singapore and Sydney, I think, is about 29 days. The whole course of post, taking only this rate of 8 ½ knots an hour was estimated at 72 days from London to Sydney, of which 29 days were between Sydney and Singapore.

3275. What do you estimate as the length of the return passage?—The return passage we reckon three days longer

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on account of the passage back by Cape Leeuwin; this is on the supposition of the vessel maintaining a speed of only 8½ knots an hour, with vessels maintaining a speed of 10 knots an hour (I think 10½ is rather too much to contract for); it is a simple rule of calculation what the length of the passage would be.

3276. How do you propose to bring China into connexion? —By means of a line of vessels which we have established experimentally between Calcutta and China; vessels would be at Singapore and would take in passengers or goods from the homeward Australian ships there, and would carry them on to Hong Kong and Shang-Hai; there would be a line of vessels homeward; that would take to Calcutta any passengers or goods going to that quarter; that is besides the regular mail line of packets by way of Ceylon and Suez.

3277. Have you any calculations as to the time which the communication would take between Singapore and Hong Kong, and Singapore and Calcutta?—Between Singapore and Hong Kong the time would be about six or seven days; that is what we do at present.

3278. Is the experiment at work between Calcutta and Singapore?—It is I believe at work at this present moment, but we have not got any advices as to the operation of it as yet. I wish to show, as regards the communication of the mother country with the Australian colonies, the effect of the plan proposed by us, as distinguished from the route by Torres Straits. The western route would bring Swan River, according to the rate of 8½ knots an hour, within 56 days of London, Adelaide, 62 days; Melbourne, 65 days; Van Diemen's Land, 66 days; and Sydney, 72 days; whereas, proceeding by Torres Straits, Sydney would be at about the same distance, 72 days; as we consider that the stopping at Torres Straits would balance the delay in calling at the other colonial ports; therefore the time occupied to Sydney in the two routes would be very nearly the same; but the time in going to Van Diemen's Land, instead of 66 days, would be 76 days; Melbourne, instead of 65 days, would be 79 days from London: Adelaide, instead of 62, would be placed 82 days from London; and Swan River, instead of 56 days, would be placed 88 days from London, because they would have to get their letters last instead of first, according to their geographical position.

3279. What is the rate of fares that you charge at present to passengers going from England to Singapore?—Our rate of fares

fares from Southampton to Singapore for first-class passengers is 135*l.*

3280. What is the rate of fares for second-class passengers?—We have no second-class fares; we only take servants proceeding with passengers.

3281. Is that the fare that is charged at all periods of the year?—This is the rate of fare during the season, when travellers choose to go; we have a deduction from that of about 20 per cent. in the slack time of the year. It is then only 110*l.*

3282. Admiral *Bowles.*] Is that exclusive of the passage across the Isthmus?—No; this includes the passage across the Isthmus; about 12*l.* of that 135*l.* or 110*l.* has to be paid to the Pacha of Egypt for the transit across the Isthmus.

3283. *Chairman.*] What is the calculation of the charge that, had these tenders been accepted, you would have made for passengers from Singapore to Sydney?—We have not made any calculations as to the rates of fares; we considered it a very uncertain estimate to make, and that it would depend upon the amount of the passenger traffic; of course we would rather come with a full ship than an empty one, and we must arrange our fares so as to induce parties to come by our ships.

3284. Do you expect to have any carriage of merchandize from Singapore to Australia?—From Singapore to Australia there would be some we consider; not a great deal; we should get some tea from China, and some other valuable articles.

3285. Sugar, and articles of that sort from Java, would not come in that way?—No; sugar we consider would not sustain the freight of a steam-vessel.

3286. Is every thing included in that charge of 135*l.*?—Yes, every article is included; the moment a passenger has paid his passage-money we consider that he is not to be called upon to pay anything more until he has landed, unless, as we find sometimes in spite of our regulations to the contrary, passengers will be so generous as to give something to the servants of the ship, but they are not required to do anything of the sort, and it is contrary to the regulations.

3287. Mr. *Wilson.*] Does that charge include wines?—Yes; champagne, port, and every description of wines, with spirits, ale, porter, &c., *ad libitum.*

3288. *Chairman.*] What do you charge for goods?—Generally speaking our rates between India and England amount to 25*l.* a ton, but in fact we take scarcely any goods; we take only

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only small parcels and light articles, such as millinery, books, &c.

3289. Goods would not bear the cost?—Not generally.

3290. Mr. *Currie.*] With regard to coals, where are the coals to come from in going from Singapore to Sydney?—We get the coals from Newcastle, in Northumberland, and from Wales; that is our main dependence. There are coals in Australia, but we consider that we shall not be at a loss to get coals from England if we do not find it more economical to get them at Australia.

3291. Do the Welsh coals go to the east?—Yes; some Welsh coals; but the Newcastle coals are less liable to waste in hot climates.

3292. Will it not be an expense to get coals from England?—No, not a great expense.

3293. How many different coaling places will there be between Singapore and Sydney?—We propose having three different coaling places besides Sydney.

3294. Mr. *Divett.*] Have you succeeded in procuring coal at a moderate rate; I mean eastern coal, the production of that country?—We have not; we have been making some experiments with the Labuan coal; we made an offer to the Labuan Company that we would receive two or three cargoes of coal from them if they would bring them to Singapore or Hong Kong, and that we would pay them the highest price we had paid for coals placed there from England. There have been two cargoes delivered, and our engineers report favourably upon them, but I doubt very much whether they will be able to supply them cheaper than we get them from England.

3295. Mr. *Chancellor of the Exchequer.*] Were they laid down at Singapore?—Yes.

3296. Do you send coal from England to Hong Kong?—Yes.

3297. What do you reckon the coal at Hong Kong, sent from England, costs you?—From 50 *s.* to 3 *l.*; and at Singapore about 45 *s.*

3298. Mr. *Divett.*] What does it cost you at other stations; for instance, Aden and Suez?—At Suez it is very expensive; it costs 4 *l.* to 5 *l.* to get coal there.

3299. Mr. *Mangles.*] Are you obliged to send coals to Singapore and China as cargo, or do you get them taken out as ballast?—We contract with parties to deliver coals at a certain price per ton at our different depôts. They take up ships on the best terms they can get them; and as in the trade with India the cargoes are much more bulky homewards than

than outwards, the vessels generally have room when they are going out.

3300. Mr. *Currie.*] At those different depôts, what establishment would you have for coal?—We are hardly prepared to speak to that yet; because, before we actually carry out the service, we propose sending a party in whom we should have confidence, to survey the whole of the localities.

3301. There would be a considerable expense at each depôt?—Yes.

3302. Mr. *Chancellor of the Exchequer.*] The only place where you propose to have a depôt, not a settlement, is near Sharks Bay?—Yes, that is represented as being the most favourable place.

3303. Mr. *Corry.*] Is that a harbour?—Yes, a roadstead; there is plenty of water there, and the ships can lie at a short distance from the shore.

3304. Mr. *Divett.*] Have you any information of coal being procurable near there?—No, I have not at this moment any such information before me.

3305. What is the nature of your establishment at Singapore; have you docks there?—We have not docks as yet; we have a coal depôt established there that any ship can lie close to.

3306. You propose making docks there?—Yes, we propose making docks there, and have been in treaty for a piece of ground that is suitable for them.

3307. Some of the witnesses who have been before the Committee have attached importance to including Surabaya in the route to the Australian colonies; do you attach importance to it?—I am not sufficiently acquainted with its commercial importance, to speak to that point.

3308. It has been stated that the proposed new company could carry out the whole service proposed to be performed by them in 18 or 20 months, and with temporary vessels in six months; do you believe that possible?—I should be very incredulous indeed that such an undertaking could be accomplished in such a short time; and from the experience I have had, I should say it was almost impossible, if not quite so; they will require a fleet of 15 steam ships to carry out the whole of their proposed plan; I think it is perfectly impossible in the present state of ship building to obtain the ships, even supposing the parties had the cash in their hands, and to get them placed on the stations in that time.

3309. Is there great activity in the building yards at this moment?—Yes, the ship-building yards are all exceedingly

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full and in active operation just now. I may mention the reason why I state this opinion so confidently: we have had one of our directors on a visit to most of the ship-building yards in the north to contract for the contruction of only one large steam ship in a reasonably short time. He has just returned without being able to succeed. Shipbuilders now refuse to bind themselves to any time, on account of the abundance of work. Their workmen are quite unmanageable on account of the abundance of work.

3310. Mr. *Wilson.*] Where is that?—In the Clyde for one place, where the men are generally very steady workmen.

3311. Mr. *Scott.*] In the early part of your evidence you spoke of the course your company intended to take by Torres Straits, and you said presuming the navigation is practicable; is not that rather a strong assumption; had not your company considered whether the navigation was practicable or not, before they proposed to take such a line as that?—I believe I have been misunderstood; we made a tender to the Government which was not accepted. In the advertisement which they issued, the route by Torres Straits was stipulated as a condition; we then tendered for that, and it will be seen by the tender that the service would be very expensive; but the tender we made last was for the western route, including all the colonies.

3312. Was the reason that you altered your course the hazard of the navigation by Torres Straits?—No, we altered our proposal, because being left at liberty by the terms of the conditions of contract to choose the route, we considered the western the more advantageous route, both for the public and for the company, inasmuch as we should get the intercolonial traffic, which we should not get by the other route.

3313. Mr. *Divett.*] In addition to which you believe the navigation by Torres Straits to be exceedingly dangerous?—I would not say that. I have collected a good deal of evidence as to both routes. The principal objection we had to Torres Straits was, that it was coming round an immense tract of coast, where there were no settlements, and no intercourse; but I have taken a good deal of information as to the other route. I have conversed with a great many captains of ships, who have navigated from Bass's Straits to Cape Leeuwin. I have put the question to them, whether they thought there was any practical difficulty in a steamer, making her way direct from that coast; and the answer I have had has been this: "If they take the proper course, there is no difficulty in going to the westward. By keeping near the coast you have changeable and baffling winds, but no strong continuing winds."

And

And I have put the question to some of them who have had experience in our steam vessels, navigating off the coast of Portugal, and in the Bay of Biscay: "Do you think there is more difficulty in a steam vessel making her way between Bass's Straits and Cape Leeuwin, than off the coast of Portugal, and across the Bay of Biscay?" And they have said, "Not so much." We have had more severe gales in the Bay of Biscay, and off the coast of Portugal, and that navigation is more difficult than the other.

3314. Mr. *Scott.*] You mentioned the course of post between London and Sydney, *viâ* Singapore; but did you mention the course of post from London to Sydney, and back again. What I want to understand is, whether you would catch the return vessel at Singapore?—Yes.

3315. Mr. *Divett.*] Yours is a chartered company?—Yes.

3316. Have you great resources at this moment ready for the extension of your operations?—We have issued shares for 500,000*l.* in addition the million of capital which we have already employed, which we are permitted to do under our charter; and the deposits of 5*l.* per share have all been paid up; and a great many of our proprietors are exceedingly desirous that we should relieve them of the rest of the money as soon as possible.

3317. Have you found that there is a great disposition to pay up money, from the circumstance of the company being chartered, which is not the case with other companies that are chartered?—I do not think it arises from our charter, but from our being prosperous and paying a good dividend.

3318. Mr. *Scott.*] In what space of time would a letter be received in London in reply to a letter which was sent to Sydney?—By the arrangement which we proposed to carry out, the outward steamer would arrive in Sydney, the terminal point, a few days before it would be necessary that the homeward steamer should start. It would allow Sydney three or four days, and therefore, if you double the passage out and home, you will ascertain the course of post.

3319. Would it be the course of post in the event of your not catching the vessel at Singapore?—If we were to miss at Singapore the regular mail steamer, proceeding on to Ceylon and Suez, we should, by the extra communication, which we have established experimentally, have the letters delayed only 10 or 12 days instead of a month; that would add only 10 or 12 days to the course of post.

3320. Mr. *Corry.*] The steamer comes direct from Singapore, so that passengers would have to be transhipped at Singapore?—

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Singapore?—Yes; the mail steamer proceeds from Singapore to Ceylon, and at Ceylon the mails and passengers are transferred to the homeward bound Calcutta mail steamer, and proceed to Suez.

3321. Would passengers have to be transhipped at Singapore and also at Point de Galle?—Yes.

3322. Mr. *Berkeley.*] You have given a decided opinion upon the impossibility of the Eastern Steam Navigation Company fulfilling that which they say they can do. Have you entered into the details, or is that only a general impression?—I give my opinion from my own experience, from the time it requires to get vessels and place them on a station.

3323. Do you know these names as builders and persons connected with fitting out vessels; Mr. Green?—Yes.

3324. Mr. Miller?—Yes.

3325. Messrs. Millar and Ravenhill?—Yes.

3326. Mr. Penn?—Yes.

3327. Messrs. Robinson & Company?—Yes.

3328. Messrs. Napier & Company?—Yes.

3329. Messrs. Scott, Sinclair, & Company?—Yes. I know all those men as being very respectable builders and engineers.

3330. These men having guaranteed to find vessels within 18 months, should you consider that to be a sufficient guarantee that those vessels could be found?—I should not, decidedly.

3331. On what ground?—Because, in my experience, those guarantees are worth nothing.

3332. Then you would take no guarantee of any sort?—Not for time.

3333. If Her Majesty's Admiralty were to guarantee you a vessel within a certain time, would you think that a sufficient guarantee?—I should have less confidence in their bringing a steamer out in a certain time. Perhaps I may support this opinion a little better if I state some facts. Our company, in undertaking the present postal service, in which they are employed with India and China, had to furnish five or six additional ships to what they then possessed, and they contracted with engineers and shipbuilders to build those ships, under stamped contracts, and the time was specified in which they were to be ready; and notwithstanding that, the company did not get the ships till upwards of 12 months after the time which was guaranteed in the contract.

3334. Mr. *Wilson.*] Was there a fine attached to the contract?—There was, but it was impossible to enforce it, because

cause the delay arose from causes over which the contractors had no control.

3335. Is it not possible to draw a contract under which the fine may be easily enforced?—Yes, it is; but it is not easy to get builders and engineers to take such a contract.

3336. Mr. *Divett.*] Is that difficulty increased at this moment by the activity that exists in all the building yards? —Yes, I think it is. This is a most unfavourable period to do it in; about two or three years back it might have been more nearly done.

3337. Mr. *Mangles.*] You were drawing a comparison between the navigation of the Bay of Biscay, which your vessels navigate, and the navigation between Sydney and Cape Leeuwin?—Yes.

3338. You were drawing the comparison with the same power of steam in both cases?—Yes, with paddle-wheel vessels.

3339. You did not mean to imply that you thought that a screw propeller would make the passage with so much ease as the paddle?—No. I feel a hesitation in speaking about the screw propeller as yet.

3340. My question refers to the auxiliary screw propeller? —I have not sufficient experience to speak of their power of navigating; I think they would navigate better than a sailing ship they having that auxiliary.

3341. Mr. *Cowper.*] Comparing the voyage from Singapore to Sydney with the voyage to New York, and to the West Indies, do you think that there is anything in the former voyage which would prevent steamers of the same class going at the same speed?—I should imagine not; but I never did cross the Atlantic in a steamer.

3342. Then if the packets to New York can attain an average speed of about 11 knots, and if the West India packets are about to attain an average speed of 11 knots, may we not reasonably suppose that the whole voyage from England to Sydney by Singapore might be made at an average speed of 11 knots, if the vessels were built for the purpose of attaining that speed, and they were willing to make a proper expenditure for fuel?—It would be done at a most enormous expense; and I cannot quite admit that there has been an average of 11 knots maintained by Cunard's or Collins' lines, taking the homeward and outward passages, together and in all seasons.

3343. The average has been obtained in vessels lately built, not in those which have been longer upon the route?—It is only lately that that has been the case.

 3344. *Chairman.*]

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3344. *Chairman.*] Is not the question of speed a question of expense?—Yes, the expense of coal in the American vessels is very great; and notwithstanding the very high rate of payment which they have from their Government, it is well known that they are not remunerative.

Jovis, 22° die Maii, 1851.

MEMBERS PRESENT.

Viscount Jocelyn.	Mr. Cowper.
Mr. Chancellor of the Exchequer.	Mr. Divett.
Mr. Henry Currie.	Mr. Willcox.
Mr. Henry Berkeley.	Mr. Corry.
Mr. Bright.	Mr. Plowden.
Admiral Bowles.	Mr. Wilson.
Sir James Hogg.	Mr. Stanley.
Mr. Scott.	Mr. Mangles.

VISCOUNT JOCELYN IN THE CHAIR.

Captain *Barnard R. Mathews*, called in; and Examined.

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3345. *Chairman.*] WHAT is your profession?—Master Mariner.

3346. What vessel did you last command?—The "City of Glasgow" steam ship.

3347. How is she constructed?—She is propelled by a three-bladed screw engine, she is of 300-horse power.

3348. What is her tonnage?—One thousand six hundred.

3349. When you commanded her where did she run?—She ran four voyages from Glasgow to New York, and two voyages from Liverpool to Philadelphia.

3350. How many voyages have you made across the Atlantic?—I have made 102 passages in steam vessels.

3351. How many of those passages have been made in vessels propelled by the screw?—Twelve passages.

3352. Do you consider that the screw, as an auxiliary, has answered?—Exceedingly well indeed; I prefer it to the paddle-wheel.

3353. Have

3353. Have you likewise commanded paddle-wheel vessels? —I have.

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3354. What paddle-wheel vessels have you commanded? —The "County of Pembroke," the "Benledi," and the "Great Western."

3355. Have you made passages across the Atlantic at all periods of the year?—I have.

3356. Have you seen any severe weather?—Very severe weather.

3357. How have you found the screw to work in severe weather?—Exceedingly well; I have never had an accident with the screw.

3358. What is the average rate of speed you have been able to maintain with screw vessels?—Our average rate of speed, in six passages to the westward, was between eight and nine knots an hour, summer and winter.

3359. How have you worked the screw; have you worked it as the principal motive power, or as an auxiliary?—As an auxiliary.

3360. What was your winter average?—Our winter average was between seven and eight knots to the westward, and about 10 knots to the eastward; indeed, on one of my passages to the eastward, from Philadelphia, my average speed was greater than that of the "Niagara," a vessel which sailed nearly at the same time from New York; comparisons were made of our logs in Liverpool.

3361. Do you know what was the proportion of power to tonnage of the "Niagara"?—She must have been between 700 and 800-horse power, and from 1,700 to 1,800 tons; she is a large ship.

3362. When you encounter heavy gales with a screw vessel, how do you work; do you beat to windward, or do you put your head direct to the wind?—I brace my yards sharp up, and set my storm fore and aft sails well, and haul my sheets well aft, and make the vessel as a sailing vessel, lying to at the same time, and going from five to six knots against the heaviest gale that I had to encounter during the last winter.

3363. Have you sailed in other seas besides the Atlantic? —I have sailed in sailing vessels in other seas.

3364. Do you consider the weather in the Atlantic to be as severe as the weather in any other part of the world?— I have experienced worse weather in the Atlantic than in any other seas that I have been in.

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3365. Within how many points of the wind did the vessel run when she was under the sail you have described?—Four points; she made very little lee-way; the speed through the water from the propeller decreased the lee-way considerably.

3366. What is the minimum distance you have made dead to windward on any occasion?—That is in moderate weather of course? When it was blowing strong I never went head to wind; I always kept the ship a little from her course, to get the advantage of the fore and aft sails; I never went head to wind except in moderate weather.

3367. What distance have you performed of your course when going head to wind?—Going head to wind, we could average 7 ½ and 8 knots in moderate weather.

3368. Beating?—We could in very severe weather average six knots through the water, going four points from our course.

3369. The Committee is desirous of knowing what distance you made in your course?—During the 24 hours, going obliquely in the manner I have described, I suppose, going in a straight course, I have made 120 miles; that is in almost the worst weather in the Atlantic.

3370. You mean that in the worst weather you could make a distance of 120 miles, head to wind?—No, we never work head to wind in bad weather; we do not think it prudent to do so. In the 24 hours we made 120 miles in the straight course, taking the angle; with the ship I have gone 160 miles through the water; and I have gone 120 miles in a direct course; deduct 40 miles for the angle.

3371. Have you seen the vessels that are proposed to be employed by the Screw Navigation Company, for the passage from the Cape to Australia?—I have.

3372. What do you think of those vessels?—I like the models of them very much.

3373. Do you believe that they are capable of performing the service for which they are tendered?—I have not the least doubt of it.

3374. The vessels are proposed to be 1,400 or 1,700 tons, with 250 or 300-horse power, and they engage to perform the service at an average rate of 8 ½ knots an hour; and the Committee are given to understand, that at certain periods of the year there are violent gales to be encountered off the western coast of Australia. Do you believe that those vessels will be able to maintain an average rate of speed of 8 ½ knots an hour, even though in a portion of their route they may have to encounter very severe weather?—I am not competent to judge of the

the weather that they may have to encounter; but, judging from the weather that we have had to encounter in the "City of Glasgow," in crossing the Atlantic, I do not see why those vessels should not attain as great a speed, if not a greater, than the "City of Glasgow" has attained; they have some advantages over the "City of Glasgow." Capt. *B. R. Mathews.* 22 May 1851.

3375. You consider that in the worst period of the year, in the Atlantic, similar vessels would be able to maintain a similar average rate of speed?—I do.

3376. Mr. *Bright.*] If you take two voyages to the United States and back, being altogether about the distance from England to Sydney, or 12,000 miles, would you say that that rate of speed could be obtained on an average by the ships that have been mentioned?—I think so, if it is about that distance. If you take four passages, that is, two passages out and two passages home, that will give you the average weather. We have the westerly winds to meet in going out, and we have a favourable wind in coming homeward; and the average passage out and home, would be 15 days and a few hours; that would be 60 days for the four passages.

3377. *Chairman.*] What is the greatest rate of speed which you have attained with the auxiliary screw?—Ten and three-quarters knots, without the assistance of canvas.

3378. What is the minimum speed you have attained?—The speed has been as low as five and four and a half knots in very severe weather.

3379. How were the winds at the time you made that minimum speed?—The wind was blowing a very heavy gale from west north-west; we were keeping the ship off, her head was west south-west at the time going to the southward, with our storm sails set.

3380. Mr. *Corry.*] The question had reference to steaming only; what was the minimum rate of speed that you obtained in steaming?—We never tried to steam only in those cases; it is not prudent to do so; it is best to carry your storm-sails to keep the vessel steady in the sea and assist the engines.

3381. *Chairman.*] Can you state to the Committee the average rate of speed of the "Great Western" out and home, and the average rate of speed of the "City of Glasgow" out and home?—The average rate of speed of the "City of Glasgow" exceeded that of the "Great Western" in the three years I commanded her, both out and home.

3382. Mr. *Corry.*] What were the tonnage and power of the "Great Western"?—The "Great Western" was 450-horse

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horse power, and I was given to understand that she was 1,340 tons.

3383. Mr. *Mangles.*] Do you think that an auxiliary screw vessel can be absolutely certain of getting out of the Channel against severe westerly gales?—There is no doubt of that. I have done so in the "City of Glasgow," in going both from Glasgow and from Liverpool.

3384. A screw vessel could come down the river and get out of the Channel altogether, even against strong westerly gales?—Yes.

3385. Mr. *Corry.*] What was the minimum distance obtained by the "Great Western" against a heavy sea in 24 hours?—I have known her to go not more than 40 miles in 24 hours.

3386. And with the screw the speed has never been less than 4½ knots an hour?—That is by keeping the vessel off, and setting the fore and aft canvas with the paddle-wheel vessel. When you keep her off you could set the fore and aft canvas just as you do with a screw vessel; still it has not the advantage which it has on board the screw vessel.

3387. Mr. *Mangles.*] Have Cunard's vessels ever failed to get out of the river?—Not to my knowledge.

3388. If they had this great disadvantage of which you speak would they not have failed?—They have the coast to protect them from sea, which they take advantage of; you are not out in open sea; till you get clear of Cape Clear you have always some little shelter.

3389. *Chairman.*] What is the general cargo of the city of Glasgow; how is she employed between Glasgow and America?—She carries all goods that offer from America; fine and coarse goods.

3390. What portion of her tonnage is applicable to cargo?—We have had nearly 1,000 tons measurement in that ship, besides fuel sufficient for nearly 30 days.

3391. That is leaving 600 tons for her fuel?—Yes.

3392. What quantity of fuel is she capable of carrying in those 600 tons?—When we are scanty of goods and anticipate a long passage, we put in a larger quantity of coal; it is economical to do so; not that we anticipate that we shall require it, but coal is cheaper on this side and of better quality than in America.

3393. How many days supply do you take on board?—Our general supply would be for 24 days.

3394. How many miles would that carry the vessel?—There would be about four days coals left after the winter passage;

sage; on my arrival in Philadelphia, after the longest voyage in the "City of Glasgow," I had 140 tons left out of the 620 that were put on board.

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3395. With a vessel of 1,700 tons and 300-horse power having to perform a passage which would take 30 days, what proportion of tonnage would she require for the fuel that would be necessary?—About the same as the "City of Glasgow;" I think 600 tons would be sufficient for a vessel of that power.

3396. That would leave 1,000 tons for cargo?—Yes; the "City of Glasgow" is constructed very differently from those vessels that I saw yesterday; their floors are raised much more than the "City of Glasgow," and therefore she would not carry so much cargo.

3397. You estimate that they would be able to carry 1,000 tons of cargo, and have sufficient fuel to perform a voyage that would occupy from 25 to 30 days?—Yes.

3398. Mr. *Divett.*] You spoke of the "City of Glasgow" being 300-horse power; up to what power do you work your engines?—Up to 500-horse power, when she has been going at the speed I have said, of 10 ¾ knots an hour.

3399. What was your consumption of coal when you were working the engines at their nominal power of 300-horse power?—Twenty-four tons and a half.

3400. When they were working up to 500-horse power what was the consumption of coal?—From 30 to 32 tons.

3401. Mr. *Corry.*] You stated that the engines of the "City of Glasgow" were 300-horse power; is that the nominal power?—Yes.

3402. To what power could they work?—To 500; I do not think we could go beyond that.

3403. What was the expenditure of coal per horse power per hour, when you were working at the full power?—From five to six lbs. per horse-power per hour.

3404. Is the "City of Glasgow" full ship-rigged?—She is barque-rigged.

3405. In sailing with a leading wind, do you put the fires out?—Never.

3406. You keep the screw always working?—Yes; on one occasion we disconnected our screw to see what the effect upon the speed of the ship would be; we found when the screw was connected and the engines were going that we were going at about 10 ½ knots an hour, and when we had disconnected the screw, giving time to get up her speed, we found that she was going

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going at 8 ½ knots an hour; we lost two knots an hour by it, and we did not like to sacrifice that, therefore connected again:

3407. Under those circumstances what was the expenditure of coal per hour per horse-power?—The screw was not disconnected long enough for us to ascertain that.

3408. Where the screw is kept working with a leading wind, what is the expenditure of coal?—About 18 tons in 24 hours.

3409. What would that be per horse-power per hour?—About 4 ½ lbs. per hour.

3410. Is the "City of Glasgow" built of iron or of wood?—Of iron.

3411. Do you prefer iron to wood for screw ships?—I do.

3412. On what grounds?—I think you can fasten the ship abaft much better when it is of iron than when it is of wood; the tremulous motion will affect the ship more when it is of wood than of iron; and I think iron is stronger than wood.

3413. Have you ever found the sternpost or after-body of the "City of Glasgow" affected by the action of the screw?—No.

3414. She has kept tight?—Yes, we have examined her bottom, and she is as perfect now as she was when she went to sea.

3415. Mr. *Divett.*] Have you ascertained what your loss of way is when the screw is disconnected?—We do not disconnect the screw; it is a fixture on the end of the shaft.

3416. Have you seen the screw with the feather?—Yes.

3417. From your experience of the effect of the screw when disconnected, what is your opinion of a screw of that description?—I am very favourable to the feathering of the screw from what I have seen of it. If, by turning the screw, it can be disconnected easily, and without corrosion, I think it is important to disconnect it.

3418. When you speak of disconnecting the screw, you mean that the screw is free to work without any action of the engine at all?—Yes.

3419. I understand you to say that there is a considerable obstruction in the way of the vessel with the screw in that position?—There is; we lost two knots an hour from it.

3420. What would be the effect if the screw were fixed upon the feather principle?—I do not see that the screw would retard the vessel in any way; the screw merely fills up the hole which it is intended to work in; I like the principle much.

3421. Do you think that there is any danger of derangement to a heavy screw arising from that principle?—That is the only point

point which I am not clear upon; I like the principle, if it can be done easily; but I am not quite clear as to whether there is not a corrosion which might prevent its action, if it was not disconnected frequently; if it was not feathered frequently. Capt. *B. R. Mathews.* 22 May 1851.

3422. Assuming the principle to be practically effective, you have no doubt of the utility of it?—Not the least; I like the principle much.

3423. Mr. *Currie.*] Your screw was the old-fashioned screw; it was not lifted or feathered?—No; it was the old-fashioned screw; it was a fixture on the end of the shaft.

3424. Have you seen any of the machinery in the Queen's ships for lifting the screw by hydraulic machinery?—No.

3425. You are not aware of the mode adopted of lifting the screw in 10 minutes, and putting it back in two minutes?—I have heard of that machinery.

3426. Would you consider that a preferable mode?—I am not an advocate for lifting the screw out of its place; but for the feathering principle I am decidedly an advocate.

3427. Mr. *Divett.*] Are you afraid of some derangement of the screw from the machinery necessary for the purpose of lifting it?—No, it is not that; but when you are scudding and you are caught suddenly by a heavy wind, you require the screw in action immediately to keep the vessel steady, and prevent the sea breaking over her stern; you are wallowing about in the trough of the sea while you are putting the screw in; the motion of the sea is terrific at that time, and you want the power of the screw applied immediately; you cannot afford to lose 10 minutes in fixing the screw.

3428. Mr. *Berkeley.*] Is it your opinion that the postal communication with any given place could be performed to a certainty with the auxiliary power of the screw?—We have been very punctual in the "City of Glasgow": in the four voyages to Glasgow there was only 10 hours difference; and on the two voyages to Liverpool only 12 hours. There is a deficiency of punctuality in all steamers; the "Great Western" was 23 days in going to New York, the Liverpool and Halifax line have been the same time; but I have not been more than that. In the "City of Glasgow," to Philadelphia, we have been very regular; our logs have been as regular as those of the "Great Western": it is wonderful to see how regular the ships' logs have been. I am sorry that I have not brought the logs with me to prove that.

3429. How many voyages have you made in the "City of Glasgow"?—Twelve voyages across the Atlantic.

3430. And

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3430. And you have maintained great regularity in the passages?—Yes.

3431. Would you recommend for long voyages more power in the screw, to carry the mails?—In carrying the mails you wish the vessels to carry them as quickly as possible, and the more power you have the better, whether it is applied to the screw or to the paddle-wheel.

3432. Do not you consider that at the present moment, when such great improvements are taking place in the speed of vessels, you would be behindhand in your arrangements if you were to get communication with any given place under full power?—Decidedly: for carrying the mails time is an object, and full power certainly would be recommended; but where economy is the order of the day, which it is I believe in all our Government transactions, and in everything else now, auxiliary power would be sufficient.

3433. Do not you consider that there are many mercantile arrangements which would be seriously affected unless the communication took place within a certain time, and that consequently full power and the speediest passage is necessary to carry out such communications?—Yes; but you could get your speed up with the screw as easily as you could with the paddle-wheel; we have screw vessels running in the Channel which beat paddle-wheel vessels; I refer to small coasting vessels.

3434. You commanded the "Scotia," did you not?—I did.

3435. She was one of the packets on the Holyhead station?—She was.

3436. You know the "Banshee"?—Yes, perfectly well.

3437. Which was the faster of the two?—We ran with the "Banshee" and beat her by 16 minutes from Holyhead to Kingstown; it was the first time that ever the "Banshee" was beaten.

3438. What was the "Scotia's" tonnage?—The builder's measurement was between 500 and 600 tons.

3439. What was the pressure on the boiler?—We carried our maximum pressure 11 lbs. during the time that I speak of; I have worked at from 9 lbs. up to 14 lbs.; 14 lbs. was the pressure to which I was limited at that time; by a letter which I received from Captain Moorsom, our managing director, I was desired not to go beyond 14 lbs. pressure; I ran with that pressure when I ran with the "Banshee."

3440. How many knots did you make?—From 13 to 14 knots.

3441. Were

3441. Were you consuming much more coal at that time than you consumed with the ordinary pressure?—Considerably more.

3442. What was your consumption of fuel in the "Scotia" with the ordinary pressure?—About three tons per hour.

3443. What was it in the "Great Western" in crossing the Atlantic?—During the time I commanded her our consumption of coal was about 26 tons a day.

3444. Do you consider that you could have increased your nominal power six times by any contrivance?—No.

3445. Do you think you could have increased it five times?—No.

3446. Do you think you could have increased it four times?—No.

3447. Three times?—No.

3448. Twice?—Probably we could have increased it twice; I will go as far as twice; but beyond that I do not think I should be justified in going.

3449. We have been told that the "Banshee" worked up to 1,800-horse power, her cylinders' stroke being, I presume, the same as yours?—The "Banshee" had oscillators, and ours were double cylinders, made by Messrs. Maudslay.

3450. Do you believe it possible that she could have worked up to 1,800-horse power?—I do not.

3451. You have stated that you do not believe that heavy screws could be easily lifted?—My opinion would decidedly be against it.

3452. You think that there has been no invention as yet giving any facility to lifting heavy screws?—I would not be certain upon that point, for I have not examined into it. I have heard of many wonderful things being done in lifting, especially the lifting of the Britannia Bridge; therefore I do not think I could go so far as to say that it was impossible.

3453. Do you think that the lifting of a heavy screw would be something like lifting the Britannia Bridge?—Not quite so much as that.

3454. Mr. *Currie.*] How long has the "City of Glasgow" been running?—She has run for 12 months; I took the command of her when she was launched, 12 months ago; I ran the first voyage in her, and the ship and the engines were perfectly new.

3455. When you went from Glasgow, I presume you went by the north of Ireland?—Yes.

3456. When you went from Liverpool you went by Cape Clear?—Yes.

3457. In

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3457. In both instances you had bad weather?—Yes; on one occasion, from Glasgow to New York, I thought it most prudent to go by the south channel; I found that the wind was prevailing from the northward, and therefore I bore up, and went by the south channel.

3458. In returning, was the gulf stream of any advantage to you?—I have found very little benefit from the gulf stream; it is nearly exhausted by the time you get to New York; it is not worth while to go so far to the southward to get into that stream.

3459. What do say is the average length of your voyages?—The average would be about nine knots, that is taking the whole 12 passages out and home; I have not gone into the calculation very accurately, but I think it is about that.

3460. You have been to see the iron ships that are now building at Blackwall?—I have.

3461. Do you consider that those ships could perform a voyage to Australia and back at an average speed of 8½ knots an hour?—I should say decidedly that their average speed would be as great as the average speed of the "City of Glasgow"; they have greater advantages than the "City of Glasgow," because they have a greater rise of floor.

3462. In the last 12 months has there been great improvement in the machinery of steam-vessels?—Yes.

3463. Do you consider that these vessels could go from St. Vincent's to Port Phillip without coaling?—I should say there is no doubt they could, if they took advantage of the prevailing wind in those seas, and disconnected the screw.

3464. I am presuming that the ship is well handled?—Of course.

3465. Have you ever been there?—No; I have never been further than Bombay.

3466. But you are aware what the winds are?—I can see from the Directory; but I have not found a Directory that is not incorrect. I have never navigated the seas where the water has been so smooth and the weather so pleasant as in those seas.

3467. Suppose anything should happen to the screw, how would the ship sail?—You would have a fine sailing ship.

3468. How fast would she go?—We have tried the "City of Glasgow" when the screw has been disconnected and has been dragging, and even then we have made 8½ knots an hour.

3469. Was the "City of Glasgow" as good a ship as these

these ships will be?—No; the "City of Glasgow" has a long flat floor and a very bad delivery.

3470. You said in the early part of your evidence that with the assistance of the screw you could generally make your course to windward?—Yes, and allowing for the lee way, the ship has made much better headway than I expected.

3471. Supposing you had been in a sailing vessel without an auxiliary screw, would that have been the case?—Certainly not, with the winds that I encountered. I should have drifted on to the coast of Portugal, or very close to it.

3472. In bad weather, do you consider that there is a great difference between the screw and the paddle?—Yes; I would rather be in a screw than in a paddle-wheel vessel.

3473. If an accident happened to the screw, what would be the effect?—It depends upon the wind we have. You have advantages in a paddle-wheel steamer; you can take off the boards, and secure the wheel without the boards, and you can use a sail; but then you cannot do away with the paddle-box.

3474. And a paddle-box offers great resistance to the wind?—Yes.

3475. Mr. *Corry.*] I think you stated that the engines of the "City of Glasgow" of 300-horse power would work up to 600 actual power?—No; I said that they would work up to 500, and that I could not go beyond that. I said in answer to Mr. Berkeley that a screw vessel would work up to twice her nominal power; but with regard to the "City of Glasgow," I said that it would work up to 500-horse power.

3476. Can you maintain an average speed of nine knots an hour with engines of 300 nominal power, working up to 500?—Yes; we work them up to 500 horse power only on particular occasions; for instance, we worked them up to 500 when we were getting near a port, and were anxious to get in at daylight, and we had a sufficient quantity of coals to do it.

3477. In beating to windward against a heavy sea do you work the engines at high pressure?—No, it is not prudent to drive the ship against a heavy wind, and with a heavy sea running; in that case we make the sails do the work as much as we can.

3478. You stated it as your opinion a vessel might perform the passage from St. Vincent's to Port Phillip without coaling, by disconnecting the screw?—Yes, and taking advantage of the winds that prevail.

3479. But in the "City of Glasgow" you say you never disconnect the screw?—No; but I understand the screws in

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these ships are to be on the feather principle; they can turn the screw much more easily than in the "City of Glasgow;" it offers no resistance that I see.

3480. In these vessels, therefore, would they not put out the fires when they did not want to use the screw?—Yes; or they would bank up the fires, keep the water in the boiler, and disconnect the propeller, and the steam might be got up in an instant; by the time they have the propeller connected the steam is up sufficient to drive it if it falls to a calm; or you have an adverse wind, and require to use the propeller, by the time it is connected the steam is up and ready to act. I should not put the fires out; I should keep the water in the boilers, and keep it at such a temperature that you might get the steam up immediately.

3481. Would not the expenditure of coal under those circumstances be very small?—Yes; you throw the propeller aside; and in case you require to use the propeller you have nothing to do but to put more coals on the fire, and by the time the propeller is connected you are in a position to use it.

3482. Mr. *Bright.*] You stated that in the "City of Glasgow" you had made the passages with great regularity, varying generally only a few hours. Taking the passage from England to Sydney, a distance of 12,000 miles, and comparing it with a corresponding distance traversed in crossing the Atlantic, can you say what extra time would be required for the "City of Glasgow" as an auxiliary screw steamer, more than would be required if she were a full-power steamer?—The Halifax boats made their passage in 13 days to the westward; in the "City of Glasgow" we made the passage in about 15½ days. There was a difference two and a half or three days in the passage.

3483. Would you say that taking any length of passage about one-fifth more time would be required for an auxiliary screw steamer than for a full-power steamer, estimating the average weather as you, having been to sea for many years, have experienced it?—I ought to be well acquainted with the prevailing winds experienced in the passage between St. Vincent's and Sydney before I could answer the question; if the vessel has a great proportion of fair wind, the difference would not be so great as if she had to contend with a great deal of foul wind.

3484. You stated that with regard to the passage across the Atlantic, the wind is as fickle as it is generally represented to be, and that you did not calculate upon any particular wind blowing

ing entirely from any particular quarter for your especial benefit? —No.

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3485. Do you suppose that circumstances with reference to that can be worse in the passage from England to Sydney than they are in the passage between England and the United States?—No; I should say that the former passage would be the more favourable of the two.

3486. You think the Australian screw steamer might calculate upon a steadier service, as regards the wind, than a vessel crossing the Atlantic?—Yes.

3487. Would you say that the difference of two and a half or three days across the Atlantic, would be more than the average difference of time that would be occupied in the passage between England and Sydney by an auxiliary screw steamer, as compared with a full-power steamer?—I should have no doubt of it, especially with the improvements that are making with the screw, and the improvements in the models of the ships that are now being built; for there are great improvements in those ships, as compared with the "City of Glasgow."

3488. You have given an opinion in favour of iron ships; is it within your knowledge that iron ships are built much more cheaply than wooden ships?—I do not know the difference in the price. As regards durability, they are very tight, and require very little attention.

3489. With regard to the cost of repairs, would you say that an iron ship would cost less than a wooden ship?—Considerably less.

3490. With regard to the speed, which would you prefer?—I think an iron vessel would have an advantage over a wooden vessel, from what I have seen.

3491. Is there any advantage in an iron ship over one built of wood, with regard to cleanliness, and the health or comfort of the passengers or crew?—I do not observe any difference; the iron ships are very cold in cold weather, and very warm in warm weather, that is the only difference; but the water is very easily kept out of them, and they are easily kept clean; there is scarcely any water in the vessels.

3492. Do not iron vessels become cooler more rapidly after the sun is gone down?—They do; iron is more subject to the extremes of heat and cold than wood.

3493. Mr. *Willcox.*] Do you recollect in what time the "City of Glasgow" made her first voyage from Glasgow to New York?—I think it was in 17 days; but she was one day detained by the ice.

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3494. In the second voyage how many days were you?—We were a little above 15 days.

3495. I understood you to say, in your former answer, that there was 12 hours variation?—That is in the return passage from New York to Glasgow; the voyages to the westward vary considerably with all steamers.

3496. Mr. *Mangles.*] Do you know anything of the navigation of the Pacific?—I do not; I have not been there.

3497. But from reading and inquiry you know the character of that ocean?—Yes.

3498. *Cæteris paribus* in every respect as to power, what should you suppose would be the performances of a screw auxiliary steamer in that ocean?—I should say the paddle-wheel was preferable to the screw, in that part of the world, because the weather is so very fine, and you have such light winds, that your sails in your auxiliary screw vessels would be of very little service to you; you would be doing it all by steam there, judging from what I have heard.

3499. Mr. *Wilson.*] The advantage which you consider belongs to an auxiliary screw steamer, is the power you have of using the sails?—Decidedly.

3500. Apart from that power you would prefer the paddle-wheel?—No, I do not say that; the principle of the screw I like better than that of the paddle-wheel.

3501. Mr. *Berkeley.*] You stated that the "City of Glasgow" worked up to 500-horse power, and that the "Great Western" was 450-horse power nominally?—Yes.

3502. As the "Great Western" had no means of working up to a higher horse power than 450-horse power, in what respect can the "City of Glasgow" be called an auxiliary power, and the "Great Western" a full power?—The "City of Glasgow" has 300-horse power, and is a much larger ship, and the "Great Western" is 450-horse power; the "City of Glasgow" has 1,600 tons, and the "Great Western" only 1,340, with a much greater power.

3503. Five hundred-horse power and 450-horse power would not be any great difference; could the "Great Western" work up to a greater power than 450?—She could not when I commanded; the new boilers did not give sufficient steam to enable her to work at a higher power.

3504. Mr. *Currie.*] Does not the power up to which you can work depend entirely upon the arrangement of the boilers?—I should say it did.

3505. Mr. *Divett.*] What pressure had you upon the boilers in

in the "City of Glasgow", when you were working at 300-horse power?—From 6 lbs. to 8 lbs. to the square inch. Capt. *B. R. Mathews.* 22 May 1851.

3506. Working up to the highest power, what was the pressure?—From 10 lbs. to 11 lbs.; not more than 11 lbs.

3507. Do you see any great advantage in the three-bladed screw over the two-bladed screw?—I think the three-bladed screw has this advantage; that is, when the two arms come horizontal, and your ship is pitching very heavily, you have always the third arm in the water to keep the engines from racing.

3508. But you think the advantage arising from that is not so great but that the feather screw, which is a two-bladed screw, has a great advantage?—The feather screw has an advantage, but I find that, in that case, the blades are much wider. The difficulty I have referred to has been obviated, in a great measure, by the blades being made wider than they would be if it were a three-armed screw.

3509. Mr. *Berkeley.*] Can you feather a three-armed screw?—No.

3510. Do not you know that broad stern posts are necessary for the purpose of lifting the screw?—I could not say; I have not seen the plan.

3511. How was the screw fixed in the "City of Glasgow"?—It was stationary; it was fastened on to the end of the shaft, and was never disturbed.

3512. How was it in the "Great Britain," which you are about to command?—The same.

3513. *Chairman.*] You stated that you made your average passages at nine knots an hour; do you mean outward and homeward?—Our average out upon six passages was eight knots an hour, and our average home was about 10 knots an hour.

3514. Putting the two together, you take the average at nine knots an hour?—Yes.

3515. Mr. *Wilson.*] Did I understand you to say that you would prefer in the Pacific a paddle-wheel steamer?—For speed in the Pacific, according to what I have been informed of the weather you have to contend with, the paddle-wheel would in my opinion have the advantage of the screw.

3516. Upon what ground?—Because you have no assistance from canvas, and the water is very smooth; you can spin across on the surface of the water with a paddle-wheel.

3517. Is the preference that you give to the screw propeller over the paddle-wheel solely dependent upon the power that

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you have in the case of the screw propeller of using the sails when the wind is favourable?—It is.

3518. Mr. *Corry.*] You mean to apply your remark to the auxiliary screw vessel?—Yes.

3519. But would not a full-power screw vessel have the same advantages as a paddle-wheel vessel?—She would.

3520. Mr. *Cowper.*] You consider that the advantage which the auxiliary screw vessel has over the paddle-wheel vessel is, that she can use her sails if the wind is favourable?—Yes.

3521. Mr. *Wilson.*] But where you put out of the question the chance of using the sails, you prefer the paddle-wheel vessel to the auxiliary screw?—I do.

3522. Mr. *Currie.*] But taking power for power, which would you prefer?—Taking power for power, I should prefer the screw to the paddle-wheel.

3523. Mr. *Divett.*] Do you feel confident of the correctness of the opinion you give as to the increased quantity of coal with a higher power not being greater than from 24 to 32 tons in the 24 hours?—That is our experience in the "City of Glasgow."

3524. I ask that question, because we have had a witness before us who was asked this question: "Assuming then that an engine, working up to her nominal power, consumed a certain quantity of coals, if she was to work up to three times that power she would consume a much larger quantity of coals?" and he said, "Yes."—Certainly; my experience in the "Scotia" would teach me that.

3525. What was the result of your experience in the "Scotia"?—At the time I commanded the "Scotia" I reduced her consumption to 13 tons; whereas when I commanded her the consumption amounted to 18 tons in the very short distance of 4 ½ hours across the Channel.

3526. Though the difference between 24 and 32 tons seems a very small increased consumption of coal for the great great increase of power, you think it is sufficient?—Yes, quite sufficient.

3527. *Chairman.*] Have you had any opportunity of testing the relative power of paddle-wheel and screw vessels; have you ever ran alongside a paddle-wheel vessel?—No, I have not, in the "City of Glasgow;" but I have been lately round the coast in a screw vessel, the "Apollo;" we ran with a paddle-wheel vessel, and we beat her.

3528. What was the comparison of power in the two vessels?—The

—The "Apollo" was of much less power and a larger vessel than the other.

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3529. Mr. *Cowper.*] You have stated that from what you have heard of the winds in the South Pacific Ocean, you do not think the voyage one very favourable to the use of the auxiliary screw vessel; what is your opinion with respect to the Southern Indian Ocean?—I really have had no experience in the Southern Indian Ocean, and I should be sorry to give an opinion upon what I am not conversant with; all I have spoken to now has been from practical knowledge.

3530. You have not the same knowledge of the Southern Indian Ocean as of the Southern Pacific?—The question as to the Pacific Ocean was put in reference to what I had heard; and in reply to that question I stated that I had heard that there was very little wind in that ocean, and that there was a good deal of smooth water, and that that being the case, the paddle-wheel was preferable to the screw, unless the screw was of equal power.

3531. If the voyage from Bass's Straits to the Cape of Good Hope entails a good deal of strong westerly wind in the early part of the voyage, and a good deal of light variable wind in the latter part of the voyage, should you think it a favourable sea for an auxiliary screw vessel?—Yes, that would be very similar to what we have to contend with in the Atlantic.

3532. You think it an advantage to have heavy winds in the early part of the voyage, and light winds in the latter part of the voyage?—The strong winds that you spoke of in the first part of your description would resemble the weather we have in the Atlantic; and in such weather I should say that the screw was preferable. It is more economical, and there is certainty in it, for there is not that uncertainty about the screw that some people imagine. I have tested it in the "City of Glasgow." I compared our speed with that of the "Great Western." I had the logs kept in the same manner, and I found that our voyages were as nearly as possible the same as theirs.

3533. With an auxiliary screw vessel you prefer strong winds to light winds?—Yes; I like the screw vessels as sea boats.

3534. Mr. *Berkeley.*] In the case of a voyage where you had the wind in your teeth one way and in your favour the other way, as in the case of the trade winds, which would you prefer, the paddle-wheel vessel or the screw vessel?—It depends upon the strength of the winds in a great measure;

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if the winds are light the paddle-wheel will go straight at it, and make her passage when the auxiliary screw vessel may not have power sufficient to make the passage; in each case the steam power would have to contend with the wind, because the sails would be of little service to you with light winds.

3535. In heavy gales, which one way you have to oppose and the other way to go with, which vessel would have the advantage?—I should like the screw vessel myself, because you can put the vessel in heavy weather in such a position in the sea that you will not get any damage, and you will get the advantage of the sails.

3536. Can you do the same thing with a paddle-wheel vessel?—In heavy weather we have to do the same thing with paddle-wheel vessels; in very heavy weather, in the "Great Western," we kept her off the wind and set our storm sails; we found it less likely to do damage, because we got the wind obliquely upon the bow.

3537. Mr. *Cowper.*] Within how many points of the wind could you put the head of the "City of Glasgow"?—Within four points.

3538. Mr. *Currie.*] You could sail and steam within four points?—Yes.

3539. *Chairman.*] What vessel do you command now?—The "Great Britain."

Arthur Anderson, Esq., a Member of The House; further Examined.

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3540. *Chairman.*] IN reference to the evidence which you gave on the former day, have you anything further to state to the Committee?—I wish to supply an omission which I made in giving an answer to the question of the honourable Member for Exeter, as to the means which the Peninsular and Oriental Steam Navigation Company possess for extending communications in the East. I stated that besides a million of capital already paid up and employed by the company, they had issued shares to the extent of half a million, upon which 5 *l.* deposit had been paid, and that we had had numerous applications from shareholders pressing us to receive their money at the rate of five per cent. interest; which we have declined to do, having no use for the money at present. But besides that we have a certain reserve fund which we have laid by for the purpose of placing our stock when it has arrived at a more advanced age; but

but in the meantime it is available as capital. We have also power to raise money upon debentures at certain rates of interest. With all these means I see no difficulty in the Peninsular and Oriental Company, if it were required, increasing their capital by at least one million, in addition to the capital they have now employed.

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3541. Mr. *Bright.*] You say that an instalment of 5 *l.* has been paid upon the new shares; what is the full value of those shares?—£. 50; there is 45 *l.* to be paid upon them.

3542. What premium do those new shares upon which 5 *l.* is now paid, bear in the market?—I think the premium is 6 *l.* per share; the shares, with the 5 *l.* paid upon them, are quoted in the market at about 11 *l.*

3543. *Chairman.*] You stated in your former evidence that you considered that it would be impracticable to construct 15 steam ships and place them upon their stations in 18 months, or to place temporary vessels upon the Australian station in six months?—Certainly; and as I gave a decided opinion upon that point, I have some additional facts which the Committee will allow me to state to show that I had some reason for giving that opinion. I have a statement of the dates of some vessels, they amount to five or six, which the Peninsular and Oriental Company required about six years ago with a view to reinforce their fleet on the Indian service. The contracts were that the vessels should be delivered in about one year; our contracts were with the most respectable shipbuilders and engineers in the kingdom. We had one ship, the "Pottinger," which was contracted to be delivered on the 8th of July 1845; the contract was made and signed in October 1844, and she was not delivered until the month of August 1846, being 13 months after the time that was agreed upon. Another ship, the "Ripon," was contracted to be delivered at the same time, and she was not delivered until October 1846, being 15 months beyond the time agreed upon. Another vessel, the "Indus," was not delivered till May 1847; and I believe that was contracted to be delivered at the same time as the two others.

3544. Mr. *Bright.*] Were those contracts made with a penalty in case of non-performance?—Yes.

3545. Was the penalty enforced?—No, there was no penalty enforced; there were a number of very threatening letters written to the parties.

3546. Do you mean to tell the Committee that respectable shipbuilders are in the habit of making contracts, and that you cannot rely upon the contracts being fulfilled by the time stipulated for?—You will not find one shipbuilder out of a hundred

that

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that would enter into a contract for time with a heavy penalty, under a certainty of that penalty being enforced. There are so many circumstances over which shipbuilders have no control, which frequently prevent the delivery of the ships in the time contracted for. In the instance I have mentioned, we did not attribute any blame to the shipbuilders; the parties contracting to supply the iron did not complete their contracts in the proper time, the men also struck for wages; and we were perfectly satisfied that the contractors had done all they could to accelerate the vessels. The penalties were of no use to us, it was the vessels we wanted; and therefore we were to do the best we could under the circumstances, and get the vessels as quickly as we could.

3547. Mr. *Wilson.*] Are there any conditions attached by the contractors to the penalties, with a view to protect themselves against the penalties?—No.

3548. They make an unconditional contract?—The contract states that the vessel is to be delivered within a given time, and then there is a general penalty for the non-performance of the whole contract.

3549. But that penalty is not generally legally enforced?—No.

3550. Then the penalty is a mere matter of form?—It amounts to something like it.

3551. Admiral *Bowles.*] Do you mean to inform the Committee that it would be impossible for any company to execute this contract?—I mean to state that from the experience I have had in these matters. and my experience is tolerably extensive, that for any company or party whatever, even supposing they have the money ready, to undertake to get 15 large steam vessels constructed, delivered, and placed on their various stations with a view to undertake an extensive service in the Indian seas, within 18 or 20 months, is in my opinion an utter impossibility.

3552. Mr. *Bright.*] Within what time?—Within 18 months.

3553. Would as many as 15 vessels be required for the Australian service?—I answered the question upon the statement made to me, that the Committee had been informed that a service requiring 15 vessels could be undertaken in 18 months.

3554. You consider that any contractors undertaking to perform such a service as the Australian postal communication would be certain of disappointing the Government, from their inability to perform it?—I certainly consider so, in the time mentioned.

3555. *Chairman.*]

3555. *Chairman.*] You have stated that one of the reasons of the contract into which the Peninsular and Oriental Company had entered not being performed, was the difficulty of the contractors obtaining iron at that time?—Yes.

3556. Your statement has reference to facts which took place six years ago?—Yes.

3557. Were there any particular reasons why there was a difficulty in obtaining iron at that time?—Iron may be more readily obtained at present than it was then; there was a difficulty in obtaining it then; iron was in great request. But there is another circumstance now which I think will equally prevent the accomplishment of such an object, and that is that all shipbuilders and engineers at present are full of work.

3558. Was not there a great demand for iron six years ago?—As far as my memory goes, there was not any particular demand for iron; shipbuilding was rather more active at that time.

3559. Mr. *Berkeley.*] Are you not aware that the "Oroonoco" has been built exactly in the time specified?—I am not aware; I presume she was laid down 12 months since; it was more easy then than it is now to get ships built.

3560. She was laid down in September, and finished according to the contract, and launched only a week ago, and named by Lady Mary Tufnell; if that could be done with one vessel, could it not be done with other vessels?—A steam vessel being merely launched is a long way off being ready for service; I am not aware whether the engines of that vessel are completed or not.

3561. Mr. *Wilson.*] Suppose you were to offer to a shipbuilder a contract to build a ship within a certain period, would he not, if he did not fulfil the contract within that time, subject himself to penalties which could be legally enforced?—I think it would be very difficult to find a shipbuilder who would enter into the contract if the penalties were to be enforced. I will mention another instance illustrative of the question which has been put to me; I know of an instance which occurred two years since, in which the Sardinian Government contracted for a vessel, and had the contract very stringently drawn by a professional man; the penalty was to be enforced as liquidated damages. The ship was not delivered till long after the time agreed upon, but the agent of the Sardinian Government here was satisfied that the contractors had done all they could to accelerate the completion of the vessel, and there was no prosecution upon it. That was a more stringent contract than we are in the habit of drawing, because we trust more to the

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the exertions of the shipbuilders and engineers, they knowing that the sooner they get their work completed the sooner they will get their money; and we think that that is better security than any penalties.

3562. *Chairman.*] With reference to the speed at which you stated that you propose to perform the service between Singapore and Sydney, you stated that you proposed to put on a faster class of vessels than that with which you commenced the communication?—The other day when I was examined I gave in a table which was framed upon the basis of 8 ½ knots an hour for the Australian service. We have, since that table was framed, constructed other vessels of a faster description, and from the experience of those vessels I am brought to the opinion that a speed of 10 ½ knots an hour may be obtained; and therefore I have formed a table upon that basis. I may state that I have just received particulars of the performance, between Southampton and Malta, of a new steamer we have recently brought out, the "Ganges" of 1,200 tons and 500-horse power; and I find that she ran from Southampton to Malta, a distance of 2,132 miles, in 194 hours, being an average speed of 11 nautical miles per hour for the whole passage. We have also another vessel of the same size and power, the "Singapore;" that vessel, as well as the "Ganges," under favourable circumstances, has gone 14 knots an hour; I therefore think that with such vessels as these an average speed of 10 ½ nautical miles may be obtained.

3563. What class of vessels would those be that you propose to put on between Point de Galle, or Singapore, and Sydney?—We have made no proposal as yet as regards the description of vessels that we should employ.

3564. But, to perform the service, what kind of vessels would you require?—If we undertook the service we should perform it with the best vessels that could be brought out, with vessels that would obtain the highest speed.

3565. They would be similar to those vessels of which you have just spoken?—Probably not so large as those; but we could obtain vessels of equal speed that were not quite so large.

3566. Have you any estimate of what the increased expense would be of obtaining vessels that would go 10 ½ knots an hour?—We know, as a fact, that obtaining that increased speed is attended with increased expense; you have more fuel and you do not get increased speed equal to the increase of fuel. This is a table which I have formed upon the new principle of the vessels going 10 ½ knots an hour, which I will read, and give in.

[*The*

[*The same was delivered in, and read, as follows:*]

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STATEMENT of Course and Time of the proposed Postal Communication with *Australia* viâ *Singapore*, estimated at an Average Speed of 10½ Nautical Miles per Hour, or 252 Miles per day.

Outward Route.			Days.
Mail dispatched from London, say	24th June	1850,	
Will arrive at Suez	6th July.	„	12
Leaves Suez 6th July, and arrives at Aden	11th „	„	17
Leaves Aden 12th July, and arrives at Galle	20th „	„	26
Leaves Galle 21st July, and arrives at Singapore	28th „	„	34
Leaves Singapore 29th July, and arrives at Batavia	31st „	„	37
Leaves Batavia 1st August, and arrives at Swan River	8th Aug.	„	45
Leaves Swan River 9th August, and arrives at King George's Sound	11th „	„	48
Leaves King George's Sound 11th August, and arrives at Adelaide	15th „	„	52
Leaves Adelaide 16th August, and arrives at Port Phillip	18th „	„	55
Leaves Port Phillip 19th August, and arrives at Sydney	21st „	„	58
Vessel remains at Sydney five days.			
Homeward Route.			
Leaves Sydney 27th August, and arrives at Port Phillip	29th Aug.	1850	2
Leaves Port Phillip 30th August, and arrives at Adelaide	1st Sept.	„	5
Leaves Adelaide 2d September, and arrives at King George's Sound	8th „	„	12
Leaves King George's Sound 9th September, and arrives at Swan River	12th „	„	16
Leaves Swan River 13th September, and arrives at Batavia	20th „	„	24
Leaves Batavia 20th September, and arrives at Singapore	22d „	„	26
Leaves Singapore 23d September, and arrives at Galle	30th „	„	34
Leaves Galle 1st October, and arrives at Aden	9th „	„	43
Leaves Aden 10th October, and arrives at Suez	15th „	„	49
Suez to London *viâ* Marseilles, 12 days	27th „	„	61

From Sydney to Singapore (on the homeward route) three days have been allowed for strong westerly winds round Cape Leeuwin, and to ensure meeting the Homeward Mail Steamer at Singapore for Suez, as above.

Course of post, out	58 days.
„ „ home	61 „
Time to stop at Sydney	5 „
	124 days.

In

A. Anderson, Esq., M.P.

22 May 1851.

In some of the ports the stoppage would be somewhat more than is allowed in this table, but in others it would be considerably less.

3567. Mr. *Cowper.*] How many days stoppage would there be?—There would be eight days stoppage during the whole passage from Suez to Sydney.

3568. If the communication were to be maintained between Sydney and Singapore with screw vessels, of course it might be done at much less expense?—It would be done no doubt at a less expense.

3569. What are the objections to that?—The objection I think is that no branch of postal communication by screw vessels ever could be arranged to run in combination with a line of paddle-wheel steamers, inasmuch as there is a greater uncertainty in the voyages of screw steamers. When they have contrary winds they experience greater delay from that cause than paddle-wheel steamers would do; and the branch line to Australia would very frequently, I think, miss the homeward mail to England, with which scarcely any delay would occur.

3570. *Chairman.*] Have you been in the room for the last hour, and heard the evidence of Captain Mathews?—I have heard part of his evidence.

3571. You admit that he is one of the most practical seamen in the country?—He is a very able seaman.

3572. You have heard the evidence which he has given in support of the screw, in which he stated that with the auxiliary screw you maintained an average speed of nine knots an hour, and that in his own case he has done so; and that comparing his speed with that of the "Great Western," that of equal speed has been obtained in a screw vessel?—But I noticed that he, like many transatlantic navigators, confined his observations to the homeward voyage.

3573. He applied his observations generally, but his evidence does not shake your opinion?—No. I know the vessel that he commanded; it is much larger than could be put upon the Australian service. There is a great objection to the branch line being carried on by screw steamers, running in combination with a line of paddle-wheel steamers, which are more certain. I may state a fact in connexion with that, that the present service carried on by the Oriental and Peninsular Company consists of various lines of steamers, all meeting each other; Point de Galle, in Ceylon, being the general focus. There are vessels from Southampton to Alexandria; there are vessels from Suez to Calcutta; and there are vessels from Point

de

de Galle to China. The whole postal lines concentrate at Point de Galle, where the China mail is transferred from the Calcutta steamers to the China line of steamers. Out of no less than 74 voyages upon those postal lines, the steamers of the Peninsular and Oriental Company have always met at Point de Galle within 48 hours of each other; and out of the whole of those 74 voyages there was only one occasion in which the China mail missed the homeward steamer. I do not think such regularity could be maintained by screw vessels running in combination with paddle-wheel vessels. *A. Anderson*, Esq., M. 22 May 1851.

3574. Mr. *Bright.*] What you mean to say is, that you must allow a greater length of time for the auxiliary screw steamer? —Yes; but the benefit to be obtained from shortening the postal communication would thereby be lost, inasmuch as the screw vessel would have to start much earlier from Sydney than a paddle-wheel vessel, in order to ensure catching the homeward China mail at Singapore.

3575. Mr. *Berkeley.*] You speak of the auxiliary screw?—Yes.

3576. Not the full-power screw?—No.

3577. Admiral *Bowles.*] What would the difference of expense be between the paddle-wheel steamers for this service, as compared with the screw steamers?—That is a fact which I am not able to speak to. I have endeavoured to ascertain the comparative expense of auxiliary steamers and paddle-wheel steamers, but it is a mystery which I have not yet been able to penetrate satisfactorily. There is no doubt that the expense of the screw steamer is less; the screw steamer has the advantage also, that she can carry a greater quantity of cargo for her tonnage than the paddle-wheel steamer.

3578. *Chairman.*] Have you anything further to state on the point which the Committee have before them at present? —I am not aware of anything further.

William Morgan, Esq., called in; and Examined.

3579. *Chairman.*] WHAT position do you hold in the Eastern Steam Navigation Company?—I am their consulting Marine Engineer and Naval Architect. *W. Morgan*, Esq.

3580. How long have you devoted yourself to steam navigation?—Rather better than three and thirty years.

3581. Have you had much practical experience in the building of steamers?—I have; it has been the business of my life.

3582. What

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3582. What is your profession?—Consulting marine engineer and naval architect.

3583. From your own experience which do you prefer, the paddle wheel or the screw?—It would depend entirely upon the object. For postal arrangements I should decidedly prefer the eccentric paddle. Our knowledge of the screw is very limited; we are only learners at it; we have had a lesson to-day, in some respects; we have no such extended knowledge of what the screw can do, that would, in my opinion, have justified me in advising this Company to have embarked its capital entirely in screw vessels, where the utmost speed is required.

3584. Where you require the greatest rapidity and certainty you would recommend the eccentric paddle?—Yes, inasmuch as, from the experiments which have been carefully made by the Admiralty, we have no right to assume more for the screw than an equality with the common paddle; we must, I think rely upon those more than upon the statements of persons who command ships, however respectable or intelligent they may be.

3585. At the same time do not you consider that the experience of a practical seaman who has made 12 passages across the Atlantic in a screw vessel, he having before had the command of a paddle-wheel steamer, is of great weight?—Yes, I admit that; but there are stubborn facts to be set against the opinion that may be expressed by individuals. If the Committee would order a return of the passages made by a great variety of steamers to the Levant, they would notice that the passages of screw steamers, with auxiliary power, had varied from 5½ to as much as 14 days between Liverpool and Gibraltar, a distance of only 1,200 miles. Last week the shipping intelligence noticed the arrival of the Peninsular Company's steamer the "Ripon" at Gibraltar in four days and three-quarters, and on the same day a Liverpool auxiliary steamer arrived in eight and a half days from Liverpool, and three days afterwards another screw steamer arrived from Liverpool in eight days; this vessel evidently started about the same time as the "Ripon," and therefore they met with pretty much the same weather, and yet there was that difference between the one and the other.

3586. Do not you consider that to draw any fair conclusion from the time occupied by vessels in their passage, you must know what their power and tonnage was?—No doubt.

3587. If you merely take up a paper, and see that vessels have occupied a certain time in their passage, you can draw no conclusion

conclusion from that circumstance alone?—No, but when I find that they vary so much from each other in their passages as from 5 days to 14, I draw the conclusion that there is very great uncertainty in their passages.

3588. You have stated that you consider the eccentric paddle the best mode in which the power can be applied. Will you state the advantage that attends the using of the eccentric paddle?—There is no loss of power, either in placing it in the water or in withdrawing it; the whole of the pressure on the paddle float is devoted to the propulsion of the vessel. There is no loss from oblique action.

3589. Mr. *Corry.*] Are you the inventor of Morgan's paddle-wheel?—I am the introducer of the eccentric paddle-wheel.

3590. *Chairman.*] Did you design the vessels for the Austrian Lloyd's Steam Navigation Company?—I have designed a great many for them, 20 or 30.

3591. What is the average speed of the quickest of those vessels?—There are some of these ships in the Adriatic that have averaged nearly 12 knots an hour throughout the year; one of them made her passage to Malta and back again in adverse weather, and averaged 11½ knots in rough weather; but those are vessels which are fitted with the eccentric paddle-wheel; vessels fitted with the common paddle-wheel are not so much to be relied upon.

3592. We have heard it stated in evidence by one of the witnesses that the vessels by which they propose to connect Singapore and Sydney are to be 1,200 tons burden and 400-horse power, and he calculated upon making an average rate of speed of 10½ knots an hour. From the machinery which you have made, and the effects of the vessels which you have turned out in which that machinery has been placed, do you consider that a fair average?—With eccentric paddle-wheels I have no doubt they would accomplish a greater speed than that; with the common paddle-wheels, I should doubt it. I should consider the common paddle-wheel and the screw, as far as really careful experiments have gone, as nearly as possible on a par as to the effect of the power in each case.

3593. In that passage the vessels would have to contend at periods of the year with very severe gales, and still they calculate upon obtaining an average speed of 10½ knots an hour. Do you think that they are justified in making that calculation?—Yes. I understand that that is taking the route by the Islands and Surabaya.

3594. The route they propose to take is by Surabaya, round Cape Leeuwin, through Bass's Straits, to Sydney, and

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the return route is the same: but on the return route evidence has been given that there are severe gales during a portion of the year, and this company undertake to maintain an average rate of speed of 10 ½ knots an hour?—On occasional voyages they might fail, but if you take the average of the whole year I should say it is within bounds practically to do it; in short, I am satisfied that it could be done.

3595. Mr. *Bright.*] When you speak of the great uncertainty there is in the passages from Liverpool to Gibraltar, is there any particular reason for that, seeing that Captain Mathews has told the Committee that his voyages from America to England have not varied more than 10 hours?—The wind probably is generally favourable in returning from America, and that may be one reason; and the vessels may be opposed by the wind in one case and favoured by it in the other, and that would account for the difference.

3596. Is there not a great difference between the capacity of the vessels which go from England?—Yes; but the passage from America is more easily made than to America. There was a vessel arrived the other day from the United States in a much shorter time than Captain Mathews stated as the time of his passage; it was a sailing vessel, and she accomplished her passage at a rate of speed of 250 miles in the 24 hours. If I did not misunderstand Captain Mathews, he stated that his passages to America differed as much as two days and a half.

3597. Mr. *Divett.*] Is your opinion of the relative merits of the eccentric paddle wheel, and the ordinary paddle-wheel, founded upon experiments of vessels of the same power?—We have had experiments made to this extent: in one of the Admiralty vessels the engines were 120-horse power; those engines were taken out, and were replaced by engines of 100-horse power, with the eccentric wheel, and the vessel by that means stowed fuel for four days longer than previously, and she gained upwards of a knot an hour in her speed.

3598. Mr. *Corry.*] What vessel was that?—The "Columbia."

3599. Mr. *Divett.*] What causes are there that stand in the way of the common adaptation of the eccentric paddle-wheel to steam-engines?—If you make them really well they are very expensive, but the eccentric paddle-wheels are generally adopted for all fast-going vessels. The "Banshee," the "Llewellyn," the "Scotia," and the Post Office packets between Dover and Calais, have eccentric paddle-wheels, and they were applied to the Queen's yacht.

3600. Mr.

3600. Mr. *Currie.*] What is the difference of expense between those paddle-wheels and the common wheels?—If you made them very well they would cost from 7 *l.* to 7 *l.* 10 *s.* per horse power.

3601. How much more per cent. would they be than the common paddle-wheels?—Three or four times as much.

3602. Mr. *Bright.*] You speak of the paddle-wheels alone in giving that estimate?—Yes.

3603. Mr. *Divett.*] As to the subsequent expense, how would that be?—If the eccentric paddle-wheels are made very well, they are very durable.

3604. The subsequent expense, then, is not very serious?—It was at first, but it is reduced considerably.

3605. The great expense is in the first cost?—Yes.

3606. But having adopted them you could get an additional knot an hour?—At a high velocity, with smooth water, you would do that, but in heavy weather you would more than double the speed; where a vessel with the common paddle was hardly moving, the other might make five or six knots.

3607. Mr. *Corry.*] Was not the "Columbia" altered in form at the time they took out the machinery?—No; the engines were taken out and replaced by the others; it was the "Firebrand," now "Black Eagle," that had the bow lengthened.

3608. Have the eccentric paddle-wheels been generally adopted in the navy?—The eccentric paddle-wheels were adopted in a great many vessels, but they were discontinued.

3609. For what reason?—From the expense of the repairs.

3610. Mr. *Cowper.*] Is there not a difficulty in repairing those paddles of which you are speaking, at distant stations?—No; because you can carry a duplicate of the parts of the engine that are most subject to wear, and when they are worn you can put these in their place; that is one of the improvements which have been perfected of late years.

3611. With these duplicates it would not be difficult to get the engines repaired at distant stations?—No.

3612. Would the duplicates occupy any large space?—No, a box would carry the duplicates of those parts that were necessary for the repair.

3613. Mr. *Currie.*] How many miles do you suppose you could go without coaling?—On this route in particular, the greatest distance is between Aden and Ceylon, 2,150 miles.

3614. And you contemplate going that distance without coaling?—Yes; the alteration in the vessel's immersion in the

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water, in consequence of the consumption of coal, would not affect the eccentric wheel.

3615. Mr. *Divett.*] Do you know any very large steam vessels that have adopted the eccentric paddle-wheels?—I have not seen the eccentric paddle-wheels on any very large steamers, but I understand the Royal Mail Company have adopted them for all their new vessels; and I understand the Peninsular and Oriental Steam Navigation Company have adopted them in some of their large vessels.

3616. Is there any greater difficulty in applying the eccentric paddle-wheel to large vessels than to small ones?—No.

3617. Mr. *Berkeley.*] The "Avon" and the "Severn" are your vessels?—Yes.

3618. Are they built with the eccentric paddle-wheels?—No.

3619. Would it be very easy to supply them?—Yes, it would.

3620. How many vessels have you built for the Austrian Lloyd's Steam Navigation Company?—I suppose 30; but I have built others besides; I fitted out the vessels for the German fleet, and I have built others.

3621. Do you think the Eastern Steam Navigation Company will experience any difficulty in procuring vessels and engines to carry out their undertaking within the given time?—None whatever; and I may state that some of the leading parties connected with the Eastern Steam Navigation Company decided upon contracting for the engines on their own account, and I have effected contracts for some of the vessels with some of the leading engineers.

3622. That throws aside all doubt upon the subject?—Yes; the parties have contracted to provide engines which would enable the company to commence running in January 1853.

3623. And as regards the building of the vessels, is there an equal certainty?—There is; offers have been made by one builder to build one vessel in eight months, and another in 10 months.

3624. So that you think all doubt as to the delivery of the engines, and the preparation of your vessels for the service in the time specified, is perfectly out of the question?—I do not apprehend any difficulty, because I believe the parties intend to redeem their contract, and that they are fully capable of doing so.

3625. Mr. *Cowper.*] You stated that you estimated the common paddle-wheel vessels and screw vessels were about equal as regards propulsion?—The result of the experiments conducted

conducted by the Admiralty leads to the conclusion that the common paddle-wheel and the screw vessels are about equal. *W. Morgan*, Esq. 22 May 1851.

3626. Do you think that the same regularity can be obtained in an auxiliary screw vessel,—that is, in a vessel which trusts to its sails as its chief mode of propulsion, and to the screw as an auxiliary,—as can be obtained in a paddle-wheel vessel?—No, I think not, except her regularity was based upon a lower speed; and even then the instances I have quoted would lead me to feel that I have not that reliance upon the screw which would justify me in recommending any clients of mine to adopt it for postal purposes.

3627. In ascertaining the average speed of the auxiliary screw, you think you must take a larger margin between the maximum and the minimum speed than you would take in the case of a full power paddle-wheel vessel?—Yes.

Joseph Miller, Esq., called in; and Examined.

3628. *Chairman.*] WHAT profession do you belong to?—I am an Engineer. *J. Miller*, Esq.

3629. Are you acquainted with the construction of steam-engines for vessels?—Yes, I am.

3630. Have you devoted your attention to that subject particularly?—I have been engaged entirely in that department for 34 years.

3631. Mr. *Chancellor of the Exchequer.*] Your firm is a maker of engines?—Yes.

3632. *Chairman.*] Do you consider that vessels of the power proposed by the Eastern Steam Navigation Company would be capable of maintaining the speed they propose to maintain?—Yes, an average speed of 10½ knots an hour.

3633. Is it your opinion that the propulsion of vessels by the paddle-wheel with the feather paddle, is the most certain mode of conveyance for mails and passengers?—As far as my knowledge goes at present, I should say that it is undoubtedly so.

3634. For postal arrangements you would recommend the mode of conveyance by the paddle-wheel steamer?—Yes, with the feathering paddle.

3635. You are aware of the engines that are proposed to be put into these vessels to perform the service between Singapore and Sydney?—Yes; I know their construction.

3636. You are aware of their tonnage and power?—Not exactly; I know the general form of the vessels.

3637. Do you consider the proportion of the power to the

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tonnage of those vessels sufficient to enable them to perform that service?—I have no doubt of it.

3638. Have you taken into consideration the gales which are said to be prevalent on that coast, which the vessels would have to encounter?—Yes.

3639. And you feel satisfied that with those gales they would be able to maintain an average speed of 10 knots an hour?—Yes.

3640. Are you employed by the Eastern Steam Navigation Company?—Yes, we are going to make some of their engines.

3641. Mr. *Berkeley.*] You have no doubt that the engines will be ready by the time specified?—Not any doubt.

3642. And you have very little doubt that the vessels will be ready to put those engines in?—I cannot speak to that; but shipbuilders can always build vessels as quickly as we can build engines for them; there are more casualties affecting the time of making the engines than the time of building the vessels.

3643. Do you know any vessels to which the common paddle-wheel has been applied, and any vessels to which the eccentric paddle-wheel, Mr. Morgan's paddle-wheel, has been applied, and what the result has been?—I know of one steamer, a Gravesend steamer, that had a great deal of tremulous motion in it, and I recommended the company, more particularly with a view to getting rid of the tremulous motion, to adopt the feathering paddle, not expecting that there would be much improvement in the speed in smooth water; but to my surprise, under those circumstances, we gained about a mile and three quarters an hour by placing the eccentric wheel in place of the common paddle-wheel; another instance was a vessel called the "Joseph Miller;" we did the same there, and gained an equal increase of speed.

3644. Mr. *Wilson.*] Did it also get rid of the tremulous motion?—Yes.

3645. Mr. *Berkeley.*] I believe you were opposed to the feathering of the paddle at first?—Yes, I was opposed to it because I saw there were difficulties in keeping it in repair; but now that we have a better knowledge of that kind of wheel, I have no doubt of its succeeding.

3646. You consider that, taking the screw and the paddle, power for power, the one would be equal to the other?—The common paddle-wheel and the screw, as far as I have been able to observe, are about equal. There was one instance which proved that; the "Basilisk" and the "Niger" were tried together, and when the exertion of power by the indicator

cator was equal, the speed of the two vessels in ordinary weather was as nearly equal as possible; that was one of the most conclusive experiments, but the vessels were not exposed to bad weather.

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3647. Mr. *Chancellor of the Exchequer.*] Is their power and tonnage in about the same proportion?—Very nearly the same; the "Niger" was 1,070 tons, with 400-horse power, nominally, and the "Basilisk" was 1,000 tons, with 400-horse power also.

3648. Mr. *Currie.*] What was the result of the trial?—The result of the trial was, that the "Niger" went 10·427 knots, and the "Basilisk" went 10·59 knots.

3649. Mr. *Corry.*] Were not both those vessels designed by the same builder?—They were.

3650. Mr. *Currie.*] Those vessels were tried under favourable circumstances?—Yes; they were not tried in bad weather; it was a great pity that that was not done.

3651. Mr. *Berkeley.*] They were tried with the common paddle-wheel?—Yes.

3652. What difference would the feather paddle-wheel have made?—Taking all the difference of bad and good weather, I think you would generally obtain an increase of at the least two miles an hour.

3653. For postal arrangements, where it is essential that the mails should be delivered within a given time, what class of steamers would you prefer?—I should prefer the feathering paddle-wheel, as far as my knowledge goes at present.

3654. Mr. *Divett.*] Will you be good enough to give the difference of expense between the feather paddle and the ordinary paddle?—I am not clear upon that; the feathering paddles ought to be made exceedingly well; the difference of expense must be considerable, for they ought never to be made in an inferior way.

3655. Can you give an approximation?—I should say the feather paddle would be three times the cost of the common paddle.

3656. Mr. *Chancellor of the Exchequer.*] What would a pair of common paddles cost for a vessel of 400-horse power?—I cannot tell you exactly.

3657. What would a pair of Morgan's paddles cost for a vessel of 400-horse power?—I suppose they would cost 8*l.* to 10*l.* per horse power. But Mr. Morgan is better evidence upon that subject than I am. I understand that Mr. Morgan estimates the cost of the common paddle-wheel at 2*l.* per horse power.

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3658. Mr. *Currie.*] Have you heard anything of the passage of the "Hellespont" in coming from the Cape?—No.

3659. Do you know what her average speed was?—No, I do not.

3660. You are not aware that it was 8½ knots an hour?—I dare say it was.

3661. Has any paddle-wheel done that, taking power for power?—I have no hesitation in saying, that the auxiliary screw will be found to be in the highest degree useful where great speed is not required.

3662. But has any paddle-wheel vessel made that speed, taking power for power?—I cannot say, for I do not know what her power is; it would be difficult to draw a parallel without knowing all the circumstances.

3663. Is there any instance on record of a paddle-wheel vessel doing anything of that sort, taking power for power?—I do not know; I am not aware of the circumstances under which the vessel obtained that speed; to enable me to answer that question satisfactorily I ought to know what the resistance of the vessel, and the real power exerted by the engines, were in each case.

3664. Mr. *Willcox.*] You have stated that you entertain no doubt of this proposed new company being able to fulfil its contract?—No, not as regards the time that has been stated to us. I do not know what their contract may be.

3665. I believe your firm has fitted the vessels of the Peninsular and Oriental Company with six or seven sets of marine engines; the "Iberia," the "Ripon," the "Indus," the "Pottinger," the "Bombay," the "Ganges," and the "Madrid"?—Yes.

3666. Can you name any one of those vessels in which you kept your contract time?—Yes, I think I can; the two last vessels, the "Ganges" and the "Bombay." The engines were in our shop waiting for the vessels; by the desire of the directors we kept the engines waiting. I do not recollect as to the others.

3667. Do not you recollect that in the case of the "Indus," the "Ripon," the "Pottinger," and the "Bombay," you were 12 months behind your time?—I think the delay arose from the vessels not being completed in time, in consequence of the difficulty of getting iron. The engines were ready before the vessels were launched.

3668. Do not you recollect coming repeatedly and apologizing for the delay, and stating your inability to get your iron

iron, from the iron not coming up, and sometimes from the men refusing to work?—I dare say I may have done that. *J. Miller*, Esq. 22 May 1851.

3669. You gave that as the reason why you could not perform the contract?—It is very possible; I cannot recollect the circumstances.

3670. Mr. *Bright.*] Are you building iron ships as well as wooden ships?—Yes. It is not our principal business to build iron ships, but we do build iron ships; we built the "Llewellyn," the Royal mail packet; and we have built several others.

3671. Is it proposed that you should build any of the ships of this new company of iron?—I have not heard of any intention of that sort.

3672. Do you know whether they are to be built of iron or of wood?—I believe of wood; but I do not know.

3673. What is the iron of which these large steamers are mostly built; is it Welsh, or English, or Scotch iron?—It is English iron.

3674. Mr. *Plowden.*] Is the vessel built of scrap iron?—No, it is built of a superior sort of merchant iron.

3675. The scrap iron is considered the strongest, is it not?—Yes; but it would be too expensive for building a ship.

3676. Mr. *Corry.*] Do you know what would be the comparative expense?—No.

John Yates, Esq., called in; and further Examined.

3677. *Chairman.*] IS there any objection on the part of the Eastern Steam Navigation Company to lay a list of their shareholders before the Committee?—I can only reply, as I have done before, that I have no authority from the directors to lay a list of the shareholders before the Committee. *John Yates*, Esq.

3678. Mr. *Bright.*] Are you able to state that when you come to deal with Government for the performance of the service, you will be able to lay before them a full list of the subscribers of the company, and to give security that you will be able to perform your contract?—Yes.

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Appendix, No. 1.

TENDERS for the CONVEYANCE of MAILS to *Australia*, by Sailing and Steam Vessels.

TENDERS for the Conveyance of Mails to *Australia* by Sailing Vessels.

1843: 20 March -	Messrs. Godwin & Lee -	- - Offer to convey mails to and from New South Wales for 600 *l.* per mail.
21 March -	Messrs. Calvert & Toulmin	- - Offer to convey them from London to Sydney, New South Wales, monthly, for 100 *l.* each mail, or monthly out and home for 150 *l.* each mail. This offer was accepted for 100 *l.* per voyage out, and 150 *l.* home.
30 June -	Messrs. Phillipps & Tiplady	- - Offer to convey mails to Sydney, monthly, out and home, with 12 first-class sailing vessels, for 2,000 *l.* for each voyage, out and home, or 24,000 *l.* per annum.
1846: 18 June -	- - Messrs. Cotesworth & Wynne.	- - Offer to convey mails from Liverpool alternately with London ships, monthly, to Sydney for the same remuneration as given to the London ships.

Admiralty, 17 April 1851.

TENDERS made for the Conveyance of Mails to *Australia* by Steam Vessels.

1845: - May -	- - The East India and Colonial Screw Propeller Navigation Company.	- - State they have made a proposal to the Treasury for carrying mails to the Cape of Good Hope and the Mauritius, in vessels of about 1,400 tons.
29 May -	- - The Peninsular and Oriental Steam Navigation Company.	- - Offer to compete with the above in a monthly branch, between Aden, Mauritius, and Bombay, by screw propellers, for 10,000 *l.* per annum.

1845:		
29 May -	Mr. Richard Green -	- - Monthly from London to the Cape of Good Hope, Mauritius, and thence to India, by screw propellers, fitted to some of his 20 ships named and ranging from 800 to 1,400 tons.
1848:		
23 February	- - Mr. Davidson, through Colonial Office.	- - Offers to convey mails between Sydney and Singapore, in three screw vessels of 200 tons, monthly, for 12,000 *l.* a year, and an advance of 5,000 *l.* on the departure of each vessel from England, to be repaid with interest.
11 March -	Mr. Davidson - -	- - Offers to perform the service in vessels, increased to 250 tons, and 50 horse power, for 15,000 *l.* a year.
4 May -	- - India and Australia Mail Steam Packet Company, through Colonial Office.	- - Offer to convey mail between Singapore and the Australian colonies for an extra-postage of 2 *s.* on each single letter for three years, and 1 *s.* for the subsequent 11 years, in addition to an annual payment of 6,000 *l.* from the government of New South Wales.
12 May -	- - Messrs. Davidson, Tyrrell, Watson & Young, through Colonial Office.	- - Offer for the service between Singapore and Sydney in three schooners of 250 tons with screws of 30 horse power, monthly, for 15,000 *l.* per annum, or for 1 *s.* for each single letter, and 1 *d.* for each newspaper for 10 years which may be commuted for 18,000 *l.* a year.
22 June -	- - The India and Australia Mail Steam Packet Company.	- - Offer to convey the mails between Singapore and Sydney, monthly, either by steamers or screw vessels, at the rate of 1 *s.* a letter for the whole period of the proposed contract.

TENDERS in consequence of Public Advertisement.

1848:		
2 November	- - The India and Australia Mail Steam Packet Company.	- - Tender for the service between Singapore and Sydney, monthly, with three paddle steamers of 600 tons, 200 horse power, for seven years, for 26,000 *l.* per annum. This tender was accepted, but the contract was not completed.
2 November	- - The India and Australia Mail Steam Packet Company.	- - Further tendered to perform the service with three paddle steamers, 600 tons, and 200 horse power, monthly, for 14 years, for 1 *s.* on each single letter, and an increased rate on double letters (as offered by them in May).

1848: 2 November	- - The Peninsular and Oriental Steam Navigation Company.	- - Tendered for the service between Singapore and Sydney, monthly, by steam vessels, 288 to 330 tons, and 260 horse power, for 60,000 *l.* per annum.
14 November	Messrs. Davidson & Young	- - Offer to convey mails between Singapore and Sydney, monthly, in three screw vessels of 300 tons, and 40 horse power, for 15,000 *l.* a year, in addition to any grant that might be made from the colonies.
1849: 16 November	Mr. Beamish - - -	- - Offers to convey mails from England to Sydney, &c., in auxiliary screw vessels of 600 tons, and 60 horse power, for 3 *s.* 3 *d.* a mile.

TENDERS in pursuance of Public Advertisements.

1850: 22 January -	- - The Peninsular and Oriental Steam Navigation Company.	- - Mail service between Singapore and Sydney to be included in a new bimonthly line from Southampton and Marseilles to Alexandria, Bombay, Calcutta, and Sydney, with four paddle steamers; three of 800 tons, and one of 560 tons, and of 280 and 260 horse power, receiving 105,000 *l.* per annum for the whole service.
22 January -	- - The General Screw Steam Shipping Company.	- - Tender to convey mails to Sydney, from England, by the Cape of Good Hope, in screw vessels of 1,200 tons, and 200 horse power, for 60,000 *l.* per annum.
22 January -	- - The Pacific Steam Navigation Company.	- - Tender to convey the mails to Sydney, from Panama, in five screw vessels of 600 tons, and 130 horse power, for 48,000 *l.* per annum.
22 January -	Mr. Beamish - - -	- - Tenders to convey mails between Singapore and Sydney, with six screw vessels of from 650 to 300 tons, and 80 and 60 horse power, for 30,000 *l.* per annum.
23 January -	Mr. Beamish - - -	- - States that a mistake was made in his calculations, and offers to perform the service for 27,840 *l.* per annum.

TENDERS in consequence of Public Advertisement.

1851: 13 February	- - The Eastern Steam Navigation Company.	- - Tender for the conveyance of mails to Sydney from Plymouth, *viâ* Alexandria, East Indies, &c., monthly, in vessels of 1,300 to 2,100 tons, with engines of from 400 to 600 horse power. No sum named.
13 February	- - The Peninsular and Oriental Steam Navigation Company.	- - Tender for monthly service between Singapore and Sydney, on the same terms as any of their former offers, or for the amount of postage received, not less than 1 *s.* being charged for each single letter.
13 February	- - The Pacific Steam Navigation Company.	- - Tender for monthly mail service between Panama and Australia, with five screw vessels of 1,000 tons, and 200 horse power, for 50,000 *l.* per annum.
12 February, but not received until 14 February	Mr. Blaikie - - -	- - Tenders for monthly mails between Singapore and Sydney, with five screw vessels of 800 tons, and 250 horse power, for 40,000 *l.* per annum.
26 March -	- - The General Screw Steam Shipping Company.	- - Propose extending their contract for mail service to the Cape of Good Hope, to Mauritius, India, &c.; also a line to Australia, &c., both at the rate of 4 *s.* a mile.

Admiralty, 17 April 1851.

App. No. 1.

General Screw Steam Shipping Company,
2, Royal Exchange Buildings,
26 March 1851.

Sir,

I HAVE the honour, on the part of the General Screw Steam Shipping Company, to propose to Her Majesty's Government a modification of their existing contract to the Cape of Good Hope, and its extension to the Mauritius, and from thence to Ceylon, Madras, and Calcutta, on a basis which will, the company trust, secure the approbation of the Government and the goodwill of the colonists for the advantages, both political and commercial, which the establishment of the project promises to afford.

The modification the company have to suggest is, that the service to Sierra Leone shall be maintained by an auxiliary steam ship from St. Vincent's or some other convenient island. The deviation it involves has been found obstructive and inconvenient in the performance of the general service, and Her Majesty's Government may probably consider that its exigencies and those of the public would be more efficiently supplied by a ship which should not only visit Sierra Leone, but the several establishments on that line of coast. This service the company will undertake at 4 *s.* per mile.

App. No. 1.

The company, by the terms of their present contract, are bound to use ships of 900 tons burthen and 200 horse power; they now propose for the extension of the service to employ ships of not less than 1,700 tons burthen and 300 horse power, which shall maintain an average speed of nine miles per hour.

Reckoning the sailing distances from the port of departure in England to the Cape of Good Hope at 6,500 miles, from the Cape of Good Hope to the Mauritius at 2,278 miles, from the Mauritius to Point de Galle, in Ceylon, at 1,900 miles, and from Point de Galle, touching at Madras, to the River Hoogley at 1,457 miles, the company will undertake to deliver the mails at the Cape of Good Hope on the 31st day, and at the Mauritius on the 43d day, inclusive of two days' detention at the Cape; further, the time of communication between the Cape of Good Hope and the Mauritius will then be 11 days, between the Mauritius and Point de Galle nine days, between Point de Galle and Madras three days, and between Madras and the mouth of the Hoogley four days; the whole distance between the port of departure and the mouth of the River Hoogley, inclusive of a detention of two days at each of the intermediate ports, being performed in 64 days.

The return service will be so arranged as to secure for the Cape of Good Hope and the Mauritius a monthly despatch of mails, with nearly undeviating regularity.

The company therefore propose not only to connect together the several political and commercial salient points between this country and Bengal, but to establish a postal service with the Mauritius, and between the Mauritius and India, as expeditious as, and much more advantageous than any other line which can be, in their opinion, suggested.

It will not escape the attentive consideration of Her Majesty's Government that ships of the size, power and speed intended for this service will at all times and under every circumstance secure an uninterrupted communication.

In conclusion, I have to state that the company are prepared to contract with Her Majesty's Government for the performance of the suggested service in the manner specified herein, at the rate of 4*s.* for each mile run; the contract to be for 10 years, with one year's notice.

Any further explanation or elucidation of the plan will be gladly offered.

I have, &c.

(signed) *Henry Currie*,
Chairman.

To the Right Hon.
Sir Francis Baring, Bart. M. P.,
First Lord of the Admiralty.

App. No. 1.

General Screw Steam Shipping Company,
2, Royal Exchange Buildings,
26 March 1851.

Sir,

I HAVE the honour, on behalf of the General Screw Steam Shipping Company, to propose to Her Majesty's Government to perform the postal service between England and Australasia, in the manner and on the terms following:

That a monthly communication shall be maintained between England and Sydney in ships of not less than 1,400 tons burthen, in 64 days, at an average rate of 8½ miles per hour.

That the mails for Van Diemen's Land, Adelaide, and Port Philip shall be landed in passing at King or Hunter Island, in Bass Strait, there to be received and distributed at Launceston for Van Diemen's Land, Adelaide, and Port Philip by an auxiliary steam ship, which will also collect the mails for the homeward packet.

That subordinate to the above, steam vessels shall be established between Sydney and Auckland in New Zealand, in such manner as to make the service continuous, and to extend to this colony the advantage of a monthly communication with the mother country.

That the packet shall leave Sydney in about three days after the arrival of the consecutive mail, and shall perform the passage to England in 68 days, at the average rate of 8½ miles per hour; thus establishing a communication to and from Sydney in the period of 135 days.

That Her Majesty's Government will pay for the service to and from Sydney at the rate of 4*s.* per mile; the distance being estimated at 26,500 miles, a sum of 5,300*l.* per voyage, or 63,600*l.* per annum.

That for the supplemental service from King or Hunter Island to Launceston, Adelaide, and Port Philip, and again to King or Hunter Island, which is estimated as a distance of about 1,600 miles per voyage, Her Majesty's Government will pay 4*s.* per mile, being 320*l.* per voyage, or 3,840*l.* per annum.

That for the service between Sydney and Auckland in New Zealand, which is reckoned at about 2,400 miles per voyage, Her Majesty's Government will pay to the company 4*s.* per mile, 580*l.* per voyage, or 6,960*l.* per annum.

That the contracts shall be for the term of 10 years from the commencement of the service, with one year's notice. The company having three ships well advanced in their construction, enables them to engage to commence this service within a comparatively early period.

I have stated with brevity the proposition of the company, but I beg to inform you that I am prepared to attend you whenever it may be convenient to discuss and develope the whole project.

To the Right Hon.
Sir Francis Baring, Bart., M.P.
First Lord of the Admiralty.

I have, &c.
(signed) *Henry Currie,*
Chairman.

Appendix, No. 2.

A RETURN of all CONTRACTS for the Conveyance of Her Majesty's MAILS subsisting Oriental Steam Navigation Company; General Screw Steam Company; Royal Mail of each Contract, the Time of its Expiration, the Length of Notice of Discontinuance Payment per Nautical Mile per Annum, and the Number, Size, Mode of Propulsion,

Designation of Company.	Date of Contract.	Line of Communication.	Time of Expiration.	Length of Notice of Discontinuance required.
Peninsular and Oriental Steam Navigation Company	22 Aug. 1837	England - Vigo - Oporto - Lisbon - Cadiz - Gibraltar	5th September 1840, if (but not otherwise) notice of discontinuance had been previously given.	6 months
	26 Dec. 1844	East Indies, China and Suez	1st January 1853, if (but not otherwise) notice of discontinuance shall have been previously given. -	12 months
	6 Jan. 1849	England - Gibraltar Malta - Alexandria	1st January 1853, if (but not otherwise) notice of discontinuance shall have been previously given -	12 months
General Screw Steam Company - -	22 Nov. 1850	England St. Vincent - Sierra Leone Cape of Good Hope -	14th December 1857 if (but not otherwise) notice of discontinuance shall have been previously given -	12 months
Royal Mail Steam Navigation Company	5 July 1850	England West Indies - Gulf of Mexico Brazils -	1st January 1862, if (but not otherwise) notice of discontinuance shall have been previously given -	12 months
Pacific Steam Navigation Company -	23 Sept. 1850	Panama, Callao, and Valparaiso - - -	1st April 1860, if (but not otherwise) notice of discontinuance shall have been previously given -	12 months

Appendix, No. 2.

between the Admiralty and the Companies hereinafter mentioned: viz. Peninsular and Steam Navigation Company; Pacific Steam Navigation Company; showing, in the case required, the Annual Sum paid, the Annual Nautical Mileage performed, the Average Power, and Speed of the Vessels required by the Contract.

Annual Sum Paid.	Annual Nautical Mileage Performed.	Average Payment per Nautical Mile per Annum.	VESSELS.				
			No. of	Size.	Mode of Propulsion.	Horse Power.	Speed.
£.		£. s. d. Per Mile.	*Not less than*	*Tons.*		*Not less than*	
20,500	92,304	– 4 6	5	– –	Paddles	140	—
115,000 between Calcutta and Suez – – –	114,024	1 – 2	3	– –	Paddles	500	—
			2	– –	– –	400	—
45,000 between Ceylon and Hong Kong – – –	71,520	– 12 7	2	– –	– –	250	—
1st year, 1849, 24,000 2d ,, 1850, 23,500 3d ,, 1851, 23,000 4th ,, ,, 22,500 and subsequent years, at an annual reduction of 500 *l.* from the rate of the year preceding – – –	71,400	– 6 5¼	2	– –	Paddles	400	—
30,730	151,176	– 4 –¾	A sufficient number.	900	Screws	200	Averaging not less than eight knots an hour
270,000	567,936	– 9 6	Not less than 10	– –	Paddles	400	—
			4	– –	– –	250	—
			1	– –	– –	60	—
			1	100	Sailing	—	
25,000	177,120	– 2 9¾	6	– –	Paddles	170	—

Appendix, No. 3.

LETTER from the Secretary of the General Screw Steam Shipping Company to Viscount *Jocelyn*, M.P., Chairman, enclosing Statements, &c., relative to STEAMERS.

GENERAL SCREW STEAM SHIPPING COMPANY.

2, Royal Exchange Buildings, London,
28 April 1851.

My Lord,

IN compliance with the order of the Select Committee of the House of Commons on Steam Communication with India, dated 10th of April, and addressed to me, as Secretary of this Company, I have to submit the following Answers to the Queries therein contained:—

> Query 1st. A statement is required of the frames, ages, tonnage, powers, passenger accommodation and stations of Steamers employed by the General Screw Steam Shipping Company under their contracts with the Government.

The reply to this Query will be found in Table No. I.

It is necessary to state, that, at the instance of the Board of Admiralty, to whom it seemed desirable that the Mail Packet Service to the Cape should be commenced without any delay, this Company undertook it with the small vessels named in the Table, during the interval which must elapse before ships of the tonnage and power required by the contract can be provided.

> Query 2d. A Return is required of the number of days and hours of each voyage of such Steamers, and the average speed of the voyage, and the distance run from 1st July to 31st December 1850.

In reply, I beg to state, that the Cape Mail Contract Packet Service commenced on the 15th December 1850: consequently no Return, as required, can be made.

Up to the date of this letter two only of the Cape Mail Packets have returned to England. The details of these two voyages are given in Table No. II., and, notwithstanding their small size and power, as shown in Table No. I, the unavoidable difficulties which have occurred in coaling arrangements on a line never before attempted by Steamers, and a deviation to the Cape de Verds and Sierra Leone, their voyages have proved very satisfactory.

As, from the circumstances above stated, it is impossible to give an exact reply to the above Query, the evidence which the Committee seek for may be obtained from Table No. III., which details eleven consecutive voyages of the "Bosphorus," "Hellespont" and "Propontis" in the trade between England and Constantinople.

Query

Query 3d. A Return is required of all existing regulations as to freight and fares from all places intermediate and terminal.

When the Select Committee consider that the first voyage of these vessels commenced so recently as December last, they will readily perceive that no definite arrangements as to freight or cargo could have been made in a trade completely new to Steamers, and in vessels unadapted for the service.

The Passenger Charges to the Cape and intermediate stations are given in Table No. IV.

I have, &c.

The Viscount Jocelyn, M. P.,
House of Commons.

(signed) *C. J. O'Beirne,*
Secretary.

TABLE No. I.

A STATEMENT of the FRAMES, AGES, TONNAGE POWERS, PASSENGER ACCOMMODATION, and STATIONS of STEAMERS.

Name of Vessel.	Frame.	First Voyage.	Tonnage.	Horse Power.	Accommodation for Passengers	STATION.
Bosphorus - -	Iron - -	Sept. - 1849	540	80	30	Plymouth.
Hellespont - -	Iron - -	October 1849	530	80	30	Plymouth.
Propontis - -	Iron - -	March - 1850	560	80	30	Plymouth.
Sir Robert Peel -	Iron - -	June - 1847	320	40	10	Plymouth.

TABLE No. II.

AN EXTRACT of the Log of the General Screw Steam Shipping Company's to the *Cape of*

Month.	Day of Week.	Date.	Winds.	Courses.	Distance in Miles.	Latitude Observations.	Longitude Observations.
				°	*Knots.*	*Deg. Min.* North.	*Deg. Min.* West.
January	Saturday	18	W.S.W.	S. 60 W.	104½	49 9	5 50
	Sunday	19	S.S.W.	S. 33 W.	91	47 52	7 0
	Monday	20	S. to W.	S. 27 W.	139	45 48	8 30
	Tuesday	21	W.	S. 29 W.	125	44 49	9 16
	Wednesday	22	N.W.	S. 21 W.	181½	42 12	10 40
	Thursday	23	Northerly	S. 32 W.	197	39 12	13 11
	Friday	24	Northerly	S. 26 W	202	36 14	15 1
	Saturday	25	W. to N.W.	S. 18 W.	208½	33 5	16 36
	Sunday	26	W.	S. 22 W.	209	29 42	18 3
	Monday	27	Easterly	S. 24 W.	208	26 35	19 37
	Tuesday	28	Easterly	S. 30 W.	238	23 3	21 54
	Wednesday	29	E.N.E.	S. 29 W.	221	19 50	23 48
	Thursday	30	E.N.E.	S. 29 W.	220	In Porto Grande	
	Friday	31	E.N.E.	S. 4 W.	175	14 13	25 12
February	Saturday	1	E.N.E.	S. 54 E.	207	12 11	22 19
	Sunday	2	E.N.E.	S. 66 E.	212	10 44	19 2
	Monday	3	E.N.E.	S. 70 E.	225	9 27	15 23
	Tuesday	4	Northerly	S. 66 E.	130	In Sierra Leone	
	Wednesday	5	- - -	- - -	- -	In Sierra Leone	
	Thursday	6	N.W.	S. 35 E.	146	7 7	14 21
	Friday	7	Westerly	S. 39 E.	196	4 35	12 17
	Saturday	8	S.S.W.	S. 45 E.	198	2 7	9 46
	Sunday	9	Southerly	S. 46 E.	198	0 18	6 47
						South.	
	Monday	10	Southerly	S. 59 E.	202	1 23	3 57
	Tuesday	11	Variable	S. 77 E.	188	2 2	1 4
	Wednesday	12	Southerly	S. 19 W.	189½	4 47	2 20
	Thursday	13	S.	S. 11 W.	185	7 33	3 10
	Friday	14	S.S.E.	S. 10 W.	210	10 59	3 43
	Saturday	15	S.S.E.	S. 14 W.	216	14 27	4 35
	Sunday	16	S.S.E.	S. 14 W.	99	St. Helena	
	Monday	17	S.S.E.	S. 65 E.	197	17 10	3 2
							West.
	Tuesday	18	S.	S. 68 E.	174	17 58	0 28
							East.
	Wednesday	19	S. to S.E.	S. 44 E.	168	10 49	1 30
	Thursday	20	S. to S.E.	S. 36 E.	163	21 47	2 51
	Friday	21	Variable	S. ¼ E.	181½	24 47	3 2
	Saturday	22	Variable	S. 6 E.	181	27 38	3 4
	Sunday	23	Variable	S. 72 E.	166	28 23	5 40
	Monday	24	Variable	S. 51 E.	170	29 43	7 50
	Tuesday	25	S.	S. 75 E.	171	30 21	11 7
	Wednesday	26	S.	S. 84 E.	162	30 30	14 17
	Thursday	27	S.S.W.	S. 68 E.	159	31 25	17 0
	Friday	28	S.S.W.	S. 19 E.	140	32 49	17 30
March	Saturday	1	S.S.W.	S. 6 E.	81	Table Bay	
					7,444½	- -	- -

TABLE No. II.

Steam Ship "PROPONTIS," on Her *Outward* Voyage from *Plymouth* *Good Hope*, 1851.

Time Underweigh.		REMARKS OUTWARDS.
Hrs.	*Min.*	
16	0	Westerly wind; fresh throughout, with heavy swell from the westward.
24	0	First part, strong winds; latter part, strong S. S. W. gales, with heavy sea.
24	0	First part, strong S. W. gales; latter part, more moderate.
24	0	Fresh gales throughout, with heavy sea.
24	0	Strong winds throughout, with heavy beam sea.
24	0	First part, fresh breeze; latter part, light-ones; 9. 30 under canvas, without steam.
24	0	Moderate breezes throughout.
24	0	Moderate winds, and cloudy throughout, with a long westerly swell; noon, abreast of Madeira.
24	0	First part, moderate breezes; latter part, light airs.
24	0	Moderate winds throughout.
24	0	Fine fresh trades; all possible sail set.
24	0	Same weather throughout.
24	0	7 A. M., slowed off St. Antonio; noon, arrived in Porto Grande; thick, hazy weather; 6 P. M. left Porto Grande.
18	0	First part, fine, steady trade; latter part, variable wind and confused sea.
24	0	Fine, steady trades throughout.
24	0	Steady winds throughout; hazy weather.
24	0	Moderate breeze throughout.
21	30	Midnight; stopped the engines off Sierra Leone; 6 A. M., proceeded, full speed, and arrived 9. 30 A. M.
-	-	4. 30 P. M., left Sierra Leone; detention, 31 hours.
17	30	Moderate breeze throughout, with hot, sultry weather.
24	0	Moderate winds, and fine throughout; latter part, winds variable.
24	0	Same weather throughout.
24	0	Same weather throughout.
24	0	Moderate southerly breezes; made and shortened sail as required.
24	0	Light and variable winds throughout.
24	0	Light and squally throughout.
24	0	Moderate and variable winds throughout.
24	0	Fresh winds throughout; all fore and aft sail set.
24	0	Fresh winds throughout.
18	0	Light breeze throughout; 6 A. M., arrived at St. Helena; 11 A. M., left St. Helena.
25	0	Light winds throughout, with head-sea.
24	0	Fresh breeze, with head-sea.
24	0	Winds fresh from S. to S. E., with head-swell.
24	0	Winds, same as yesterday, with light squalls.
24	0	Steady trade throughout.
24	0	Fresh winds throughout, with head-sea.
24	0	Light variable winds, with a swell from the S. E.
24	0	First part, light breezes from the southward; latter part, calm.
24	0	Fresh winds throughout, with southerly swell.
24	0	Strong winds and squally, with heavy swell from the southward.
24	0	Strong winds, and squally throughout.
24	0	Strong winds, with hard squalls, and cross-sea.
18	0	Midnight; slowed the engines for the fog to clear off; 6, came to an anchor in Table Bay.
974	0	= 7·64 knots per hour on the outward voyage.

(*continued*)

TABLE No. II.—*continued.* - - - - - -

AN EXTRACT of the Log of the General Screw Steam Shipping Company's *Cape of Good Hope*

Month.	Day of Week.	Date.	Winds.	Courses.	Distance in Miles.	Latitude Observations.	Longitude Observations.
				°	*Knots.*	*Deg. Min.*	*Deg. Min.*
March -	Saturday -	8	Southerly	N. 46 W.	214	31 33	15 16
	Sunday -	9	Southerly	N. 44 W.	234	28 32	12 0
	Monday -	10	S.S.E.	N. 35 W.	209	25 39	9 43
	Tuesday -	11	Southerly	N. 34 W.	177	23 13	7 54
	Wednesday -	12	Southerly	N. 45 W.	200	20 43	5 15
	Thursday -	13	S.S.E.	N. 34 W.	190	18 16	3 28
	Friday -	14	Southerly	N. 39 W.	180	15 59	1 34
							W.
	Saturday -	15	Southerly	N. 39 W.	189	13 31	0 29
	Sunday -	16	Southerly	N. 38 W.	186	11 2	2 28
	Monday -	17	Southerly	N. 36½ W.	182	8 37	4 17
	Tuesday -	18	Southerly	N. 36½ W.	206	5 54	6 18
	Wednesday -	19	S.S.E.	N. 37 W.	207	3 10	8 25
	Thursday -	20	S.S.E.	N. 22 W.	192	0 11	9 44
						N.	
	Friday -	21	S.S.W.	N. 33 W.	201	2 36	11 38
	Saturday -	22	S.W.	N. 31 W.	187½	5 21	13 13
	Sunday -	23	Variable	N. 30 W.	177½	Off Sierra Leone - - -	
	Monday -	24	- - -	- - -	24	Sierra Leone - - -	
	Tuesday -	25	Northerly	N. 84 W.	143½	8 45	15 27
	Wednesday -	26	N.W.	N. 70 W.	186	9 47	18 21
	Thursday -	27	Northerly	N. 40 W.	171	11 53	20 9
	Friday -	28	Northerly	N. 44 W.	177½	13 56	22 10
	Saturday -	29	N.N.E.	Various	190	15 36	24 29
	Sunday -	30	N.E.	Various	141	St. Vincent - - - -	
	Monday -	31	- - -	- - -	- -	St. Vincent.	
April - -	Tuesday -	1	N.E.	N. 28 W.	136	18 38	24 14
	Wednesday -	2	N.N.E.	N. 22 W.	190	21 32	25 30
	Thursday -	3	E. to N.E.	N. 9 N.	183	24 26	26 0
	Friday -	4	E. to N.E.	North	192	27 26	26 1
	Saturday -	5	E.N.E.	N. 19 W.	194	30 20	27 10
	Sunday -	6	Variable	N. 22 W.	180	32 43	28 18
	Monday -	7	N.N.E.	N. 44 W.	169	34 26	30 20
	Tuesday -	8	N.N.E.	N. 64 E.	170	35 28	27 20
	Wednesday -	9	N.N.E.	N. 64 E.	177½	36 53	24 6
	Thursday -	10	N.N.E.	N. 61 E.	141	37 54	21 45
	Friday -	11	N.N.E.	N. 47 E.	179	39 55	18 58
	Saturday -	12	Variable	N. 44 E.	168	41 44	16 38
	Sunday -	13	Southerly	N. 39 E.	200	44 18	13 52
	Monday -	14	S.E.	N. 38 E.	212	47 1	10 52
	Tuesday -	15	Southerly	N. 41 E.	149	48 47	8 36
	Wednesday -	16	Southerly	Various	166	Abreast of the Deadman -	
	Thursday -	17	- - -	- - -	60	Plymouth - - - -	
					7,031½	- - -	- - -

TABLE No. II.—*continued.*

Steam Ship "PROPONTIS," on her *Homeward* Voyage from the to *Plymouth*, 1851.

Time Underweigh.		REMARKS HOMEWARDS.
Hrs.	*Min.*	
25	0	Moderate winds, and fresh at times; left Table Bay, March 7, at 11 A.M.; all possible sail set.
24	0	Fresh winds, and fine throughout.
24	0	Moderate breezes throughout.
24	0	Light winds the whole of these 24 hours.
24	0	Light winds from S.E. to , the whole of these 24 hours.
24	0	Light southerly winds.
24	0	Light airs throughout.
24	0	Light trades.
24	0	Light trades, tending southerly during the day, and easterly during the night.
24	0	Same weather throughout.
24	0	Freshening trades, and fine throughout.
24	0	Fresh trades throughout.
24	0	Moderate breezes from the southward, and S.S.W.
24	0	Moderate winds, and squally; the sky much overcast.
24	0	Moderate winds, attended with heavy rains.
24	0	Light breezes and thick hazy weather throughout.
3	30	Light airs, and hazy; 3. 30 P.M. arrived at Sierra Leone; 6. 15 P.M. left Sierra Leone.
17	45	Light winds, and squally, with thick hazy weather.
24	0	Moderate breeze, and hazy, with a long northerly swell.
24	0	Moderate winds, with northerly swell.
24	0	Moderate winds, with passing squalls.
24	0	Fresh winds, and squally throughout.
22	20	Strong winds, with hard squalls throughout.
21	0	First part moderate breezes; latter part strong trades, and fine.
24	0	Fresh N.E. trades throughout.
24	0	Fresh N.E. trades; winds from N.E. to E
24	0	Same winds and weather, with confused swell.
24	0	Fresh trades, and wind veering three or four points.
24	0	The first part wind very variable; latterly steady from N.E. by E.
24	0	Strong winds, with heavy sea, from the eastward.
24	0	Strong winds, with hard squalls, and a heavy sea.
24	0	Strong gales, with heavy squalls, and high sea.
24	0	Strong breeze, with hard squalls, and heavy sea.
24	0	Fresh variable winds, with strong head sea.
24	0	Winds from N.W. to S.W., with a strong head sea.
24	0	Moderate breeze from the southward, with strong head sea.
24	0	Fresh winds throughout, with strong sea from the eastward.
24	0	First part strong S.E. winds; latter, light airs from S.W., with a head sea.
24	0	Light southerly breeze, with strong head sea; 4, made Scilly light.
7	30	2 P.M. arrived at Falmouth; 2. 30 A.M. left Falmouth; and at 8 A.M. arrived at Plymouth.
913	5	= 7 70 knots per hour on the Homeward voyage.

(*continued*)

TABLE No. II.—*continued.* - - - - - -

AN EXTRACT of the Log of the General Screw Steam Shipping Company's to the *Cape of Good Hope*,

Month.	Day of Week.	Date.	Winds.	Courses.	Distance in Miles.	Latitude Observations.	Longitude Observations.
					Knots.	*Deg. Min.*	*Deg. Min.*
December -	Wednesday -	18	- - -	- - -	167	- - -	- - -
				o		North.	West.
	Thursday -	19	N. Westerly	S. 26 W.	140	48 1	6 28
	Friday -	20	N.W. to N.E.	S. 20 W.	206	44 45	8 25
	Saturday -	21	N.N.W.	S. 43 W.	203	42 17	11 15
	Sunday -	22	Variable	S. 22 W.	217	38 58	12 40
	Monday -	23	N.E.	S. 24 W.	216	35 31	14 44
	Tuesday -	24	Northerly	S. 19 W.	115	- - -	- - -
	Wednesday -	25	N.E.	S. 18 W.	179	29 48	18 25
	Thursday -	26	N.E.	S. 22 W.	211	26 32	19 30
	Friday -	27	N.E.	S. 31 W.	223	23 15	21 53
	Saturday -	28	E.N.E.	S. 29 W.	209	19 38	23 17
	Sunday -	29	E.N.E.	S. 22 W.	205	- - -	- - -
	Monday -	30	E.N.E.	- - -	140	- - -	- - -
	Tuesday -	31	E.N.E.	S. 58 E.	205	13 1	21 5
January -	Wednesday	1	E.	S. 57 E.	216	11 10	18 2
	Thursday -	2	N.E.	S. 46 E.	202	8 37	15 44
	Friday -	3	S.E.	- - -	150	- - -	- - -
	Saturday -	4	—	—	—	—	—
	Sunday -	5	S.E. to S.W.	S. 13 E.	186	6 37	12 56
	Monday -	6	S.E.	S. 58 E.	175	5 11	10 30
	Tuesday -	7	S.E.	S. 56 E.	180	3 24	8 50
	Wednesday -	8	Southerly	- - -	180	0 54	6 5
						South.	
	Thursday -	9	S.E.	S. 17 E.	175	1 16	4 57
	Friday -	10	S.E.	S. 8 E.	155	3 42	4 46
	Saturday -	11	Southerly	S. 13 E.	160	6 18	4 9
	Sunday -	12	S.W.	S. 37 E.	187	8 46	2 14
	Monday -	13	Variable	S. 23 E.	179	11 11	1 11
	Tuesday -	14	S.E. to S.W.	S. 23 W.	185	14 3	2 19
	Wednesday -	15	S.E.	S. 24 W.	194	15 51	3 42
	Thursday -	16	S. Easterly	S. 24 W.	186	20 0	4 58
	Friday -	17	Southerly	S. 16 W.	183	22 53	5 30
	Saturday -	18	S.E.	S. 2 W.	184	25 50	6 12
	Sunday -	19	S.E.	S. 6 W.	162	28 37	6 25
	Monday -	20	S.E.	S. 55 E.	160	29 39	4 4
	Tuesday -	21	S.W.	S. 52 E.	190	31 59	2 32
	Wednesday -	22	S.W.	S. 56 E.	155	33 16	0 11
							East.
	Thursday -	23	Westerly	S. 74 E.	176	34 3	3 20
	Friday -	24	W.S.W.	S. 86 E.	195	34 15	6 55
	Saturday -	25	S.E. to S.W.	S. 89 E.	185	34 15	10 32
	Sunday -	26	E. to N.W.	S. 81 E.	161	34 40	13 46
	Monday -	27	N.N.W.	- - -	209	- - -	- - -
					7,306	- - -	- - -

TABLE No. II.—*continued.*

Steam Ship "BOSPHORUS," on her *Outward* Voyage from *Plymouth* 1850, 1851.

Total Hours.		REMARKS OUTWARDS.
Hrs.	*Min.*	
-	-	Sailed from Plymouth 8. 30 A. M.
-	-	Strong gale and heavy sea; full steam.
-	-	Heavy N. W. swell; noon, light N. E.; full steam.
-	-	Moderate breeze, and cloudy; full steam.
-	-	Strong wind and heavy sea; 12 hours under steam and sail; 12 hours under sail only.
-	-	Fresh breeze and squally.
173	0	At 1. 30. hove to in Funchal Road.
-	-	Strong and fine; 2. 30. feathered the screw.
-	-	Fresh breeze and cloudy.
-	-	Moderate and fine; variable N. E. to S. E.
-	-	Fresh and squally, with showers.
89	0	Daylight, St. Antonio bore S. W. 10 miles.
-	-	At 9. 30. at anchor in Porto Grande; at 2 P. M. weighed, and proceeded to sea.
-	-	Strong and squally; full steam.
-	-	Fresh and hazy; full steam.
-	-	Light and fine; full steam.
92	30	10. 30. arrived in Sierra Leone, and lashed alongside the Columbia, and commenced coaling.
-	-	11. 30. A. M. finished coaling; received 95 tons; light airs and hazy.
-	-	Light airs and hazy; half steam.
-	-	Calm and cloudy; half steam.
-	-	Light airs and calms; half steam.
-	-	Moderate and fine; full steam.
-	-	Moderate and fine.
-	-	Moderate trade, and fine; full steam; heavy head sea.
-	-	Moderate and fine; half steam.
-	-	Moderate and cloudy, with squalls; half steam.
-	-	Moderate and cloudy, west; half steam.
-	-	Fresh and squally; half steam.
-	-	Moderate and fine; one-third steam.
-	-	Light and cloudy; one-third steam.
-	-	Light wind, and fine.
-	-	Light wind, and fine.
-	-	Light breeze, and fine; one-third steam.
-	-	Moderate and fine; one-third steam.
-	-	Light breeze, and fine; one-third steam.
-	-	Moderate and showery; one-third steam.
-	-	Moderate and fine; 6. 30. feathered screw; 8, proceeded under canvas.
-	-	A. M. moderate and fine; half steam.
-	-	Light, variable and fine; half steam.
529	0	At 10 A. M. saw Table Bay Mountain 30 miles distant; 2. 30. moored in six fathoms water; time of detention in port 1 day 9 hours 5 minutes.
883	30	= 8. 25. knots per hour on the outward voyage.

(*continued*)

TABLE No. II.—*continued.* - - - - -

AN EXTRACT of the Log of the General Screw Steam Shipping Company's *Cape of Good Hope*

Month.	Day of Week.	Date.	Winds.	Courses.	Distance in Miles.	Latitude Observations.	Longitude Observations.
					Knots.	*Deg.* *Min.*	*Deg.* *Min.*
February -	Sunday -	2	S.W.	- - -	50	- - -	- - -
						South.	East.
	Monday -	3	S.W.	N. 49 W.	225	31 27	15 6
	Tuesday -	4	S.W.	N. 44 W.	227	28 45	11 25
	Wednesday -	5	S. to S. by E.	N. 37 W.	195	26 6	9 18
	Thursday -	6	S. to S. by W.	N. 42 W.	226	23 21	6 30
	Friday -	7	Southerly.	N. 37 W.	204	20 32	4 26
	Saturday -	8	Southerly.	N. 32 W.	202	18 4	2 33
	Sunday -	9	N.W. to N.E.	N. 36 W.	195	15 26	0 33
							W.
	Monday -	10	Southerly.	N. 35 W.	203	12 38	1 25
	Tuesday -	11	S.E.	N. 34 W.	177	10 12	3 7
	Wednesday -	12	S.E. to S.W.	N. 42 W.	201	7 45	5 20
	Thursday -	13	S.S.W.	N. 36 W.	200	5 9	7 20
	Friday -	14	S.S.W.	N. 24 W.	203	2 3	8 26
	Saturday -	15	Southerly.	N. 30 W.	208	0 57	10 10
	Sunday -	16	Westerly.	N. 17 W.	174	3 43	10 56
	Monday -	17	N.W.	N. 22 W.	175	6 25	12 4
	Tuesday -	18	- - -	- - -	186	8 5	13 46
	Wednesday -	19	- - At Sierra Leone.				
	Thursday -	20	- - At Sierra Leone.				
	Friday -	21	- - At Sierra Leone.				
	Saturday -	22	- - At Sierra Leone.				
	Sunday -	23	N.W.	N. 50 W.	105	- - -	- - -
	Monday -	24	N.W.	N. 50 W.	130	9 57	16 54
	Tuesday -	25	N.N.W.	N. 64 W.	137	10 58	18 59
	Wednesday -	26	N.N.W.	N. 44 W.	155	12 48	20 49
	Thursday -	27	N.N.E.	N. 41 W.	176	14 56	22 46
	Friday -	28	- - -	- - -	165	- - At St. Vincent's	-
March - -	Saturday -	1	N.E. by E.	- - -	80	17 56	24 33
	Sunday -	2	E. by N.	N. 2 W.	197	21 13	24 38
	Monday -	3	E. by S.	N. 7 E.	228	24 59	24 10
	Tuesday -	4	E.S.E.	N. 12 E.	204	28 19	23 24
						N.	
	Wednesday -	5	E.S.E.	N. 12 E.	217	31 49	22 11
	Thursday -	6	East.	N. 12 E.	210	35 2	20 36
	Friday -	7	Northerly.	N. 21 E.	155	37 27	19 28
	Saturday -	8	N.E.	N. 61 E.	141	38 36	16 52
	Sunday -	9	N. by E.	N. 41 E.	193	41 5	14 7
	Monday -	10	N.N.E.	N. 38 E.	185	43 30	11 32
	Tuesday -	11	North.	N. 36 E.	194	47 7	8 57
	Wednesday -	12	N.W.	- - -	220	- - -	- - -
	Thursday -	13	N.W.	- - -	98		
					6,441	- - -	- - -

- - - - - - TABLE No. II.—*continued.*

Steam Ship "BOSPHORUS," on her *Homeward* Voyage from to *Plymouth*, 1851.

Total Hours.		REMARKS HOMEWARDS.
Hrs.	*Min.*	
-	-	A. M. 10.50. calm.
-	-	A. M. moderate S.W. wind, and fine; half steam.
-	-	A. M. moderate and fine; P. M. same weather; half steam.
-	-	A. M. moderate and fine; 8 P. M. feathered screw.
-	-	A. M. fresh breezes, variable, 9; steamed P. M. fresh.
-	-	A. M. moderate and fine; noon, light winds; half steam.
-	-	A. M. light breezes, cloudy; P. M. light winds; half steam.
-	-	A. M. light airs, calms; P. M. light variable; half steam.
-	-	A. M. light airs, cloudy; P. M. light winds; half steam.
-	-	A. M. light breezes, fine; P. M. light airs; half steam.
-	-	A. M. calm and variable airs; half steam.
-	-	A. M. moderate breezes, fine; half steam.
-	-	A. M. light breezes, fine; half steam.
-	-	A. M. light airs and hazy; vivid lightning; half steam.
-	-	A. M. light breezes, hazy; half steam.
-	-	A. M. light breezes, hazy; half steam.
419	0	A. M. light airs, fine; P. M. moderate breeze; 9.30. anchored off the town, Sierra Leone.
-	-	3.30 P. M. weighed and proceeded.
-	-	A. M. light, variable winds; P. M. same weather.
-	-	A. M. light airs, hazy; P. M. light breezes.
-	-	A. M. moderate hazy; P. M. fresh breezes.
-	-	A. M. moderate fresh breezes, and fine.
141	30	P. M. entered Bay, anchored in 3½ fathoms, at 9.30. P. M. proceeded.
-	-	A. M. fresh breezes, fine, heavy swell; full steam.
-	-	A. M. fresh breezes, fine; three-quarter steam.
-	-	A. M. fresh breezes, fine; three-quarter steam.
-	-	A. M. fresh breezes, fine; half steam.
-	-	A. M. fresh breezes, E.S.E., fine; half steam.
-	-	A. M. moderate and cloudy; full steam.
-	-	A. M. light breezes, cloudy; smooth water, P. M.; full steam.
-	-	A. M. light winds; P. M. fresh breezes, squally with rain.
-	-	A. M. fresh breezes, N. by E.; P. M. fresh breezes, squally.
-	-	A. M. fresh breezes, squally heavy sea.
-	-	fresh breezes, drizzling rain, westerly swell.
287	30	9 P. M. arrived at Plymouth.
848	0	= 7. 59. knots per hour on the Homeward voyage.

TABLE, No. III.

ELEVEN CONSECUTIVE VOYAGES.		Days.	hrs.	ms.	Distance.	Rate per Hour.
					Knots.	*Knots.*
"Bosphorus," to and from Constantinople.						
First Voyage, 15 September 1849 -	Outwards -	16	15	30	3,204	8·02
	Homewards -	15	11	30	3,158	8·50
Second Voyage, 27 November 1849	Outwards -	19	4	30	3,000	6·51
	Homewards -	24	4	0	3,300	5·68
Third Voyage, 13 February 1850 -	Outwards -	21	6	0	3,204	6·28
	Homewards -	21	5	30	3,158	6·19
Fourth Voyage, 19 April 1850 -	Outwards -	16	4	30	3,204	8·24
	Homewards -	17	9	30	3,158	7·56
"Hellespont," to and from Constantinople.						
First Voyage, 15 October 1849 -	Outwards -	16	20	25	3,208	7·93
	Homewards -	18	6	30	3,158	7·20
Second Voyage, 25 December 1849 -	Outwards -	14	20	50	3,204	8·70
	Homewards -	21	4	30	3,158	6·21
Third Voyage, 12 March 1850 -	Outwards -	16	14	30	3,204	8·04
	Homewards -	21	20	35	3,158	6·02
Fourth Voyage, 25 May 1850 -	Outwards -	17	18	0	3,204	7·52
	Homewards -	21	4	55	3,158	6·20
"Propontis," to and from Constantinople.						
First Voyage, 1 March 1850 - -	Outwards -	14	19	45	3,204	9·00
	Homewards -	16	13	30	3,158	7·94
Second Voyage, 13 May 1850 -	Outwards -	14	12	0	3,204	9·47
	Homewards -	14	3	0	3,158	9·31
Third Voyage, 29 July 1850 - -	Outwards -	14	10	0	3,204	9·26
	Homewards -	17	15	30	3,158	7·45
		392	5	0	69,924	167·23

Average rate of speed per hour on 11 Voyages - - *Knots* 7·42

Appendix, No. 4.

LETTER from *G. F. Young*, Esq., Chairman of the Committee of the General Shipowners' Society, to the Right Hon. Lord Viscount *Jocelyn*, M.P., Chairman.

General Shipowners' Society, 80, Cornhill, App. No. 4.
11 April 1851.

My Lord,

THE attention of the committee of this society having been directed to the important subject now under consideration of the Honourable Committee of the House of Commons appointed "to inquire into the question of the existing steam communications between England and India, and to report whether any improvement may be made in the conduct of those communications, previous to the grant of a further contract to any Company proposing to carry on that line," it has appeared to us to involve matter gravely affecting the general interests of British shipping; and I have been consequently requested respectfully to address your Lordship, as chairman of that Honourable Committee, thereon.

In the present deeply distressed state of the shipping interest, exposed as it is by the repeal of the Navigation Laws to all the severity of foreign competition, it is of the last importance that the effects of such competition should not be aggravated by any unfair pressure from arrangements connected with any branch of the public service. Our committee are of opinion that under the existing postal arrangements, this result has followed; and they apprehend that, unless great caution be used, the general body of British shipowners will in the contemplated extension of steam communication between England, India, and Australia have further reason for just and serious complaint.

Our committee, my Lord, are fully aware that by the use of steam vessels, sailing ships must to a certain extent be displaced from employment; but they are not so ignorant as to suppose it possible, or so selfish as to desire, that the progress of improvement in navigation should be retarded, or its public advantages be foregone, for the benefit of shipowners as a class. All they have a right to expect, and this, my Lord, in their name, I confidently claim from the justice of the Honourable Committee over which your Lordship presides, is, that in the further settlement of contracts for the mail service, no undue advantage should be given either to existing or to any companies as against shipowners at large. Payments for such service inevitably become to a considerable degree bounties in favour of contractors, enabling them to defy the competition of less favoured individuals, and partaking in consequence much of the character of a monopoly.

App. No. 4.

In this respect, my Lord, the interests of the shipowners and those of the Government are identical, and all that is required justly to protect both, is that the conditions of any contract for postal service should be such as to open the widest door to free and general competition. For this purpose it is indispensable that tenders should be public, that the interval between the acceptance of any contract and the commencement of its performance should be sufficient to enable the contractor to prepare for the execution of the duty he may have undertaken; also that no conditions should be annexed which might have the effect of unnecessarily limiting the number of competitors; and that the period of duration of contracts should not be too extended. If the duty is to be commenced within a few months after the acceptance of a tender, it is obvious that none but parties possessing vessels adapted for the service can offer to undertake it. If, on the contrary, two years before the expiration of a contract, tenders were invited for future service, shipowners might in many cases, by the application of screw power to their ships, adapt them for such service, or they or other persons would have time to provide suitable vessels. At all events, by attention to this and the other suggestions which I have taken the liberty, on behalf of our committee, of respectfully offering, the injustice to which I have referred would be obviated, of enabling great companies, by a virtual premium in the shape of a grant of public money, to indemnify themselves for conveying passengers, specie, and light and valuable cargoes at rates against which shipowners, deprived of such advantages, find it impossible successfully to compete.

With high respect, my Lord, I have the honour to remain your Lordship's very faithful and obedient servant,

(signed) *Geo. Fred. Young,*
Chairman of the Committee of the General Shipowners' Society.

Appendix, No. 5.

LETTER from *Trelawney Saunders*, Esq., Secretary to the Association for the Promotion of Steam Communication with Australia, to his Excellency the Honourable *Abbot Lawrence*, &c. &c. &c. App. No. 5.

Association for the Promotion of Steam Communication with Australia, 6, Charing Cross, London,

Sir, March 15, 1851.

I AM requested by the Committee of this Association to inquire whether your Excellency would have the kindness to inform them what annual sums of money the Government of the United States now pay to Public Companies, for carriage of the mails to and from the undermentioned localities; viz.—

New York to Liverpool.

New York to Bremen.

New York to Chagres.

Chagres to San Francisco.

Should it not be in your power to reply to these inquiries, from the votes of Congress or other official documents in your hands, the Committee will esteem it a favour if you would write to Washington for the requisite particulars, and communicate to them the result.

I am to add, that the only object the Association has in view, is one which America will cordially approve of; viz., to induce Her Majesty's Government to establish a Mail Steam Communication with the Australian Colonies; and it is the opinion of the Committee, that their present negotiations with the Chancellor of the Exchequer will be materially assisted by obtaining officially from you the above information.

I take this opportunity of transmitting you a copy of the last printed Report of this Association, the title page of which you will observe contains a list of the Committee, amongst whom you will perceive the names of several noblemen, members of Parliament, and other persons of distinction, doubtless well known to you.

I have, &c.

(signed) *Trelawney Saunders*,
Secretary.

App. No. 5.

Sir, 138, Piccadilly, 30 April 1851.

I AM instructed by his Excellency the American Minister to enclose to you the within copy of a memorandum received at this legation yesterday, in reply to the questions proposed in your letter of the 15th March last.

I have, &c.

Trelawney Saunders, Esq. &c. &c. &c.

(signed) *John C. B. Davis.*

STATEMENT of United States Mail Service to and from the undermentioned Localities, as arranged to be in Operation the next Fiscal Year, commencing 1st July 1851.

LINE.	Miles.	Number of Ships each way.	Annual Cost.
			Dols.
New York to Liverpool -	3,100	2 a month for 8 months, and 1 a month residue of year.	385,000
New York *viâ* Southampton to Bremen Haven.	3,750	1 a month -	20 0,000
New York *viâ* Cowes to Havre.	3,270	Ditto, ditto -	150,000
New York *viâ* Charleston, Savannah, and Havanna to Chagres, with branch from Havanna to New Orleans.	3,300	2 a month -	290,000
Astoria *viâ* San Francisco, Monterey, and San Diego to Panama.	4,200	Ditto, ditto -	348,250
Charleston *viâ* Savannah and Key West to Havanna.	669	Ditto, ditto -	50,000
		Dolls. - -	1,423,250

Appendix, No. 6.

PRO FORMA.

MONTHLY MAIL SERVICE between *Panama, New Zealand* and *Australia*, and *vice versâ*, touching at the *Gallapagos*, and *Otaheite Islands*, to be performed by Five Screw Steamers, of 1,000 tons and 200 horse power each.

TABLE OF SAILINGS.

DATES.		PLACES.	Distance in Miles.	Total Distance.	Coal consumed according to Distance, Average about 20 Tons per Day.	Steaming, at 8½ Knots.		Stoppages.		Total Round Voyage.	
Arrive.	Depart.										
	24 April noon	From Panama:			Tons.	D.	H.	D.	H.	D.	H.
28 April 10 p.m.	29 „ 10 a.m.	To Gallapagos	900		90	4	10	–	12		
17 May 2 a.m.	18 May 8 a.m.	To Otaheite -	3,600		355	17	16	1	6		
29 „ 7 a.m.	30 „ 1 p.m.	To Bay of Islands	2,235		322	10	23	1	6		
6 June 9 a.m.	12 June 3 p.m.	To Port Jackson	1,195		120	5	20	—			
				7,930	787	38	21	3	–	41	21
					Stopping at Port Jackson -					6	6
18 June 11 a.m.	19 June 5 p.m.	To Bay of Islands	1,195		120	5	20	1	6		
10 July 16 p.m.	17 July 10 a.m.	To Gallapagos	5,550		540	27	5	–	12		
21 „ 8 p.m.	- - -	To Panama -	900		90	4	10	—			
				7,645	750	37	11	1	18	39	5

Under the foregoing table each screw steam ship would, in succession, have a lay up or rest of one month, at Panama for overhaul or repair, and the mail service with England would be performed as under.

	D.	H.	D.	H.
OUTWARD:				
Southampton to Chagres by the new ships of the Royal Mail Steam Packet Company - - - - - - - - - - - - -	18	–		
Chagres to Panama - - - - - - - - - - - - -	4	–		
Panama to Port Jackson, including intermediate stoppages - - - -	41	21		
			63	21
HOMEWARD:				
Port Jackson to Panama - - - - - - - - - - - -	39	5		
Panama to Chagres - - - - - - - - - - - -	4	–		
Chagres to Southampton - - - - - - - - - - - -	18	–		
			61	5
* The round voyage thus performed in - - - - - - - -			125	2

By the vessels now proposed, fuel sufficient for the run might be carried in addition to 200 tons of cargo, even were it necessary to keep them under steam during the whole of the time. A reserve, in case of need, may be kept in store at the Gallapagos, Otaheite, and Bay of Islands. With reference to the proposed speed of 8½ knots per hour, the Directors of the Company are assured by competent authority, that with the vessels proposed, in the waters of the Pacific, an average of even 9 knots may safely be calculated on.

* It will be observed that this is exclusive of the proposed stoppage at Port Jackson of 6 days 6 hours.

Pacific Steam Navigation Company,
Liverpool, 12 February 1851.

STATEMENT of Details respecting the PACIFIC STEAM NAVIGATION COMPANY.

STEAMERS.	Frames.	When Built.	Register Tonnage.	Collective Horse Power.	Number of Passengers that can be Accommodated.	Station under Contract.	Average Speed in Knots.	Time occupied on Voyage.	Distance run, Six Months, to 31 Dec. 1850, under Contract.	Distance to be Run in Six Months, under the New Contract.	Additional Vessels in course of Construction for the West Coast Mail Service.
Peru - -	Wood	1840	683	180 (Stipulated power each, per contract, 150 horses.)	About 150 Passengers	Between Panama and Valparaiso and the intermediate Ports.	- - 7⅝ per hour; latterly the average has increased to something beyond eight knots per hour.	- - The round voyage, Panama to Callao, is performed between the 23d of the month, and 19th of that following. The round voyage, Panama and Valparaiso, is performed between the 23d of the month, and 19th of the second following month. The number of ports visited during the latter period is 34.	- - 37,608 miles. The amount received from Government, per contract, is 20,000 *l.* per annum, equal to a mileage of about 5 *s.* 3¾ *d.* per mile.	- - 75,216 miles. The contract pay to be 25,000 *l.* per annum, reducing the mileage rate to about 3 *s.* 4 *d.* per mile.	- - Four steam ships of 1,100 tons, and 400 horse power each.
Chile - -	Wood	1840	683	180							
New Grenada	Iron -	1846	450	220							
Bolivia -	Iron -	1849	509	262							

Pacific Steam Navigation Company, Liverpool, 26 April 1851.

ROYAL MAIL STEAM PACKET COMPANY.

Pacific Passenger Fares,

Which include the use of bedding and linen, steward's fees, and all other charges, except for wines, spirits, malt liquors, and mineral waters; and except also expenses of transport, &c., on the Isthmus of Panama.

This Company's steam ships leave Southampton at 2 P.M. on the 2d and 17th of each month (unless the latter should be on a Sunday, and then on the day following), taking passengers for the North and South Pacific Ports, as shewn below.

The steamers of the Pacific Steam Ship Company are appointed to leave San Francisco on the 1st and 15th of each month.

Those of the Pacific Steam Navigation Company leave Valparaiso on the 26th day of each month.

Passengers from England booked at the Company's office, 55, Moorgate-street, London, and by Mr. Duffell, Company's office, Winkle-street, Southampton.

Those for England, at the offices of the Company's agents, at the under-mentioned ports, or on board the Company's vessels, from whom Through Tickets can be obtained, on payment of the specified fares.

From Southampton to South Pacific Ports.

Leaves Southampton each Month.	DESTINATION.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single.	Double each Berth.
		£. s.	£. s.	£. s.	£. s.
17th	Buenaventura - -	71 –	51 –	61 –	46 –
,,	Guayaquil - -	78 10	58 10	68 10	53 10
,,	Payta - - -	80 5	60 5	70 5	55 5
,,	Lambayeque - -	84 –	64 –	74 –	59 –
,,	Huanchaco - -	84 –	64 –	74 –	59 –
,,	Casma - - -	84 15	64 15	74 15	59 15
,,	Huacho - - -	85 15	65 15	75 15	60 15
,,	Callao - - -	87 10	67 10	77 10	62 10
,,	Pisco - - -	90 15	70 15	80 15	65 15
,,	Islay - - -	98 10	78 10	88 10	73 10
,,	Arica - - -	100 15	80 15	90 15	75 15
,,	Iquique - - -	102 5	82 5	92 5	77 5
,,	Cobija - - -	103 5	83 5	93 5	78 5
,,	Copiapo - - -	104 10	84 10	94 10	79 10
,,	Huasco - - -	105 5	85 5	95 5	80 5
,,	Coquimbo - -	106 5	86 5	96 5	81 5
,,	Valparaiso - -	107 15	87 15	97 15	82 15

FROM SOUTHAMPTON TO NORTH PACIFIC PORTS.

Leaves Southampton each Month.	DESTINATION.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single.	Double each Berth.
		£. s.	£. s.	£. s.	£. s.
2d & 17th	San Blas - - -	106 –	86 –	96 –	81 –
,,	Mazatlan - -	107 –	87 –	97 –	82 –
,,	San Diego - -	112 –	92 –	102 –	87 –
,,	San Francisco - -	122 –	102 –	112 –	97 –

The difference in the rates of passage-money shewn above refers merely to the sleeping cabins on board the Royal Mail Steam Packets; in all other respects the passengers will be precisely on the same footing.

No distinction is made in the cabins on board steamers in the Pacific, there being only one rate of fare for saloon passengers.

No berth is considered engaged until the whole fare is paid.

A limited number of artizans, emigrants, &c., to be victualled on the same footing as the ship's crew, finding their own hammocks and bedding, will be conveyed, when there is room for them, from Southampton to Chagres, for 20 *l.* each. The charge for such passengers from Panama by the Pacific Mail Steam Ship Company's steamers, to San Blas, is 20 *l.*, to Mazatlan 21 *l.*, to San Diego 26 *l.*, to San Francisco 31 *l.*; making the total from England to San Blas 40 *l.*, to Mazatlan 41 *l.*, to San Diego 46 *l.*, to San Francisco 51 *l.*, exclusive of expenses on the Isthmus of Panama.

Through tickets are now issued to passengers for places south of Panama; and on and after January next, through tickets will be issued to passengers for either of the places above named north of Panama. Each ship carries an experienced surgeon.

CONVEYANCE OF TREASURE.

Through bills of lading are granted for treasure from either of the above-named places for any of the undermentioned ports, the rate of freight from Panama, including all expenses of transport across the Isthmus, being as below stated. The charge in addition on treasure from places south of Panama, by the steamers of the Pacific Steam Navigation Company, is $\frac{7}{8}$ per cent., and from places north of Panama, by the steamers of the Pacific Steam Ship Company, 1 $\frac{1}{2}$ per cent.

FREIGHT ON TREASURE FROM PANAMA.

The following rates have been established on treasure delivered to the agent of the Royal Mail Steam Packet Company at Panama, for conveyance to the undermentioned places, such charges to include transport across the Isthmus, and all other expenses thence to the place of destination :—

Specie and bullion from Panama to the Bank of England - - -	1 $\frac{3}{8}$ per cent.
Ditto - - ditto - - to British Guiana, Vera Cruz, and Tampico - - - - - -	1 $\frac{7}{8}$,,
Ditto - - ditto - - to St. Domingo, Porto Rico, St. Thomas, all the Windward Islands, Havana, Honduras, Nassau, and Jamaica -	1 $\frac{1}{8}$,,
Ditto - - ditto - - to Carthagena and Grey Town - -	$\frac{7}{8}$,,
Pearls, emeralds, and all other precious stones, unset, being exempt from duty, from Panama to the Bank of England, on value - - - -	1 $\frac{7}{8}$,,
Jewellery, subject to duty, from Panama to Southampton, on value - -	2 $\frac{1}{2}$,,

By order of the Court of Directors,

55, Moorgate-street, London,
15 November 1850.

E. Chappell,
Secretary.

PRO FORMA.

MONTHLY MAIL SERVICE between *Panama, New Zealand,* and *Australia,* and *vice versâ,* touching at *Otaheite,* on the Outward Voyage, to be performed by Five Screw Steamers of 1,200 Tons, and 200 horse power each, to work up to 250 if required.

TABLE OF SAILINGS.

DATES. Arrive.	DATES. Depart.	PLACES.	Distance in Miles.	Total Distance.	Consumption of Coals according to Distance, Average 20 Tons per Day.	8½ knots per Hour Steaming.	Stoppages.	Total Round Voyage.
	23 April noon	From Panama:			Tons.	D. H.	D. H.	D. H.
15 May 1 p.m.	17 May 1 a.m.	To Otaheite - (Tampiete)	4,500		441	22 1	1 12	
27 „ 8 p.m.	29 „ 2 a.m.	To Bay of Islands.	2,205		216	10 19	1 6	
3 June 6 p.m.	12 June 6 a.m.	To Port Jackson	1,155		113	5 16	– –	
				7,860	770	38 12	2 18	41 6
					Stoppage at Port Jackson -			8 12
18 June midnt.	20 June 6 a.m.	To Port Nicholson.	1,170		115	5 18	1 6	
22 July 10 p.m.	- - -	Panama -	6,664		654	32 16	—	
				7,834	769	38 10	1 6	39 16
				15,694				

Under the foregoing table each screw ship would, in succession, have a lay up or rest of one month at Panama for overhaul or repair, and the mail service with England, would be performed as under:

	D.	H.	D.	H.
Outward:				
Southampton to Chagres, by the new ships of the Royal Mail Steam Packet Company - - - - - - - - - - - - - -	19	–		
Chagres to Panama - - - - - - - - - - - - - -	3	–		
(When the railway across the Ishmus shall have been completed, this time will be reduced to one day).				
Panama to Port Jackson, including intermediate stoppages - - - - -	41	6		
			63	6
Homeward:				
Port Jackson to Panama - - - - - - - - - - - - -	39	16		
Panama to Chagres - - - - - - - - - - - - - -	3	–		
Chagres to Southampton - - - - - - - - - - - - -	19	–		
			61	16
*Thus the round voyage performed in - - - - -			124	22

Time occupied between England and New Zealand, outward 55 days 32 hours, homeward 54 days 16 hours.

By the vessels now proposed, fuel sufficient for the run might be carried, in addition to 200 tons of cargo, even were it necessary to keep them under steam during the whole of the time. The company have already a coal depot at Panama, and reserves in case of need may be kept in store at Otaheite, Bay of Islands, and Port Nicholson. With reference to the proposed speed of 8½ knots per hour, the directors of the company are assured by competent authority, that with the vessels proposed, in the waters of the Pacific, an average of even 9 knots may safely be calculated on.

* It will be observed that this is exclusive of the proposed stoppage at Port Jackson of 8 days 12 hours.

Pacific Steam Navigation Company,
Liverpool, 1851.

INTERCOLONIAL MAIL SERVICE as proposed to the Pacific Steam Navigation Company by the *Hunter's River* Steam Company.

TABLE OF SAILINGS.

NORTH ROUTE.

No. 1.

DATES. Arrive.	DATES. Depart.	PLACES.	Distance in Miles.	Total Distance.	Time occupied. Steaming at Nine Miles per Hour.	Time occupied. Stoppages.	Time occupied. Total round Voyage.
	4 June, noon -	From Sydney :			D. H.	D. H.	D. H.
4 June, 8 p. m. -	5 June, 8 a. m. -	- - To Newcastle (Hunter's River).	70	- -	- 8	- 12	
5 June, noon -	6 June, midnight	- - To Maitland (Hunter's River).	30	- -	- 4	1 12	
				100	- 12	2 -	
7 June, 4 a. m. -	7 June, 6 a. m. -	- - To Newcastle (Hunter's River).	30	- -	- 4	- 2	
7 June, 2 p. m. -	- - -	To Sydney -	70	- -	- 8	- -	
				100	- 12	- 2	
		TOTALS - - - -		200	1 -	2 2	3 2

Table No. 2.

DATES. Arrive.	DATES. Depart.	PLACES.	Distance in Miles.	Total Distance.	Time occupied. Steaming at nine Miles per Hour.	Time occupied. Stoppages.	Time occupied. Total round Voyage.
	4 June, noon -	From Sydney :			D. H.	D. H.	D. H.
6 June, midnight	8 June, noon -	- - To Brisbane (Moreton Bay).	540	- -	2 12	1 12	
10 June, midnight	- - -	To Sydney -	540	- -	2 12	—	
				1,080			6 12

Dun. Mackellar,
Principal Agent for the Hunter River Company of Sydney.

SOUTH ROUTE.

Table No. 1.

DATES.		PLACES.	Distance in Miles.	Total Distance.	Time occupied.					
Arrive.	Depart.				Steaming at Nine Miles per Hour.		Stoppages.		Total round Voyage.	
	4 June, noon -	From Sydney :			D.	H.	D.	H.	D.	H.
7 June, 10 a.m. -	8 „ 10 p.m.	To Hobart Town.	628	- -	2	22	1	12		
				628						
11 „ 8 p.m. -	- - -	To Sydney -	628	- -	2	22	—			
				628						
				1,256					7	8

Table No. 2.

DATES.		PLACES.	Distance in Miles.	Total Distance.	Time occupied.					
Arrive.	Depart.				Steaming at Nine Knots per Hour.		Stoppages.		Total round Voyage.	
	4 June, noon -	From Sydney :			D.	H.	D.	H.	D.	H.
5 June, noon -	5 „ 6 p.m. -	To Twofold Bay	218	- -	1	-	-	6		
7 „ 11 a.m.	8 „ 11 p.m. -	To Port Phillip	367	- -	1	17	1	12		
				585	2	17	1	18		
10 June, 5 p.m. -	10 June, 11 p.m.	To Twofold Bay	367	- -	1	17	-	6		
11 „ 11 p.m.	- - -	To Sydney -	218	- -	1	-	—			
				585	2	17	-	6		
				1,170	5	10	2	-	7	10

Dun. Mackellar,
Principal Agent for the Hunter River Company of Sydney.

App. No. 6.

List of Shareholders in the Pacific Steam Navigation Company, 21 April 1851.

NAMES.	RESIDENCES.
Abinger, Lord - - -	Abinger Hall, Dorking, Surrey.
Abinger, Dowager Lady -	30, Norfolk-street, Hyde-park, London.
Austin, Capt. H. T., R. N., C B., per Mrs. Austin.	6, Sussex-place, Southsea, Hants.
Baines, Joseph - - -	London.
Bates, William - - -	29, N. John-street, Liverpool.
Bowdman, Frederick -	Sweeting-street, Liverpool.
Bowman, James - -	Halifax, Yorkshire.
Bright, Samuel - -	N. John-street, Liverpool.
Caldwell, Mrs. Jane - -	Newbury Port, Massachusetts, U. S.
Carr, William - - -	Little Gomersal, Leeds.
Claude, C. W. - - -	N. John-street, Liverpool.
Clement, J. Hamilton -	Care Mr. Bates, Liverpool.
Davies, Percy - - -	2, St. Helen's-place, City, London.
D'Arville, Catherine - -	Olveston, near Bristol.
Dickson, G. F. - -	27, Broad-street, City, London.
Donald, William - -	- - Cavendish Cottage, Forres, Morrayshire.
Estill, Edward - - -	Rumford-place, Liverpool.
Fitzgerald, Capt. J. C., R. N.	Falmouth.
Gibbs, Anthony & Sons -	15, Bishopsgate-street Within, London
Graham, James - -	Cook-street, Liverpool.
Green, Nelson & Co. -	Tower-buildings, Liverpool.
Grundy & Beardoe - -	Manchester.
Fielden, Thomas - -	Manchester.
Harcourt, Capt. O. V., R. N.	Swinton Park, Bedale, Yorkshire.
Hayne, John J. - -	15, Bishopsgate-street Within, London.
Hubbuck, G. P. - -	Wanstead, Essex.
Jack, James - - -	Rumford-place, Liverpool.
Jack, John Charles - -	Randall's Park, Leatherhead, Surrey.
Jenks, Dr. G. S., M. D. -	9, Bedford-square, Brighton.
Johnson, John Owens -	Cook-street, Liverpool.
Johnstone, Sir John, bart. -	27, Grosvenor-square, London.
Johnstone, Galbraith & Co.	Glasgow.
Just, William - - -	Liverpool.
Kennard, Henry Hewitt -	Lombard-street, London.
Langton, J. & S. Smith -	Water-street, Liverpool.
Lockett, W. & J. - -	King-street, Liverpool.
Lyon, Thomas - - -	Appleton Hall, Warrington.

NAMES.	RESIDENCES.
Lyon, Miss E. Mary -	Appleton Hall, Warrington.
Lyon, Miss Georgiana -	Appleton Hall, Warrington.
M'Iver, Charles - -	1, Rumford-street, Liverpool.
M'Laughlin, Thomas M. -	- - Care Mr. Bates, N. John-street, Liverpool.
M'Chlery, Michael - -	29, Finsbury Circus, London.
M'Viccar, John - -	Ardarroch-by-Helensburgh, N. B.
Malcolm, George - -	India-buildings, Liverpool.
Matheson, Alexander -	3, Lombard-street, City, London.
Naylor, John Edward -	- - Care T. Tinley & Sons, Orange-court, Liverpool.
Naylor, William Todd -	- - Poole-court, South Castle-street, Liverpool.
Naylor, Charles Todd -	- - Poole-court, South Castle-street, Liverpool.
Nussey, John - - -	Bustall, near Leeds.
Oakes, Capt. Orbell, R. N. -	27, Waterloo Crescent, Dover.
Perkins, A. March - -	- - 6, Frances-street, Regent-square, London.
Powles, Alfred W. - -	Water-street, Liverpool.
Powles, Jessie - - -	Care A. W. Powles, esq.
Rickerby, Miss Charlotte -	Burlington Quay, Yorkshire.
Rose, G. & L. Steere -	- - Care G. Rose, esq., Lincoln's Inn Fields, London.
Rose, G. & R. Harrison -	- - Care G. Rose, esq., Lincoln's Inn Fields, London.
Scarlett, Lieut.-Col. Hon. J. Yorke.	Bank Hall, Burnley, Lancashire.
Scarlett, James Williams -	Allerton Hill, Leeds.
Schuster, Leonard - -	Manchester.
Scoball, E. Calvert - -	Burton, Hill & Co., Malmesbury, Wilts.
Steen, Mrs. Sarah (executrix)	Sillwood House, Brighton.
Stokes, Josiah - - -	- - Bates, Stokes & Co., N. John-street, Liverpool.
Tayleur, Charles - -	29, N. John-street, Liverpool.
Templeman, J. Rodgers -	2, St. Helen's-place, City, London.
Tinley, G. A. & W. B. Naylor	- - Care T. Tinley & Sons, Orange-court, Liverpool.
Thompson, George, jun. -	Aberdeen.
Thursby, Rev. W. - -	Ormerod & Co., Burnley, Lancashire.
Torrance, John - -	29, Finsbury Circus, London.
Turner, Charles - -	Lancelott's Hey, Liverpool.
Tyrer, James - - -	Old Church-yard, Liverpool.
Wansey, William - -	1, Riches-court, Lime-street, London.
Waterhouse, Samuel, jun. -	Halifax, Yorkshire.
Wheelwright, Anne - -	- - Newbury Port, Massachusetts, United States.

NAMES.	RESIDENCES.
Whiting, Charles - -	Beaufort House, Strand, London.
Woodward, G. R. - -	James-street, Liverpool.
Wright, Henry - - -	Hatherby Lawn, Cheltenham.
Young, George and Robert	Glasgow.
Hethrington, Mellor - -	
Sewell, John - - -	19, Manchester-street, London.
Napier, Robert - - -	Glasgow.
Fruhling & Goschen - -	London.
Atherton, Jas. (transferees)	
Ripley, Thomas - -	Liverpool.
Moore, Edward - -	96, Milk-street, Liverpool.
Reay, Charlotte - -	Ellesmere, Salop.
Reay, Maria - - -	Ditto.
Herring, Jane (widow) -	London.
Bingham, William - -	Essex-street East, Liverpool.
Freer, Charles H. - -	14, Rake-lane, Liverpool.
Burnett, Robert - -	Birchin-lane, London.
Davy, G. T. - - -	15, Bishopsgate-street Within, London.

PACIFIC MAIL STEAM SHIP COMPANY.

THE ONLY THROUGH LINE FOR CALIFORNIA AND OREGON.

THE public are informed that under the new arrangements of this company, steamers inspected and approved by the navy department, and carrying the United States Mails, will continue to leave Panama and San Francisco, on the 1st and 15th days of each month, unless detained by unavoidable accident, and will touch at Acapulco, San Diego, and Monterey. The following steam packets, belonging to the Pacific Mail Steam Ship Company, are now in the Pacific, one of which will be always in port at each end of the route:

† Oregon - - - -	1,099 tons.	
† Panama - - -	1,087 „	
† California - - -	1,050 „	
† Tennessee - - -	1,300 „	
Northener * - - -	1,200 „	
† Columbia - - -	800 „	
Antelope * - - -	—— „	
Republic - - -	1,200 „	
Carolina - - -	600 „	screw.
Columbus - - -	600 „	screw.
Isthmus * - - -	—— „	
Unicorn * - -	600 „	
Fremont - - -	600 „	screw.
† New steamer - -	2,000 „	to be a clipper, oscillating engine.

The

The new steam ship "Columbia" will ply between San Francisco and ports in Oregon, awaiting at the former port the arrival of the mails and passengers from Panama, and returning without delay with the mails and passengers for the steamer from San Francisco. App. No. 6. —

A regular line of propellers will be kept up, for the transportation of freight and transient passengers between Panama and San Francisco.

The well-known steam ship "Sarah Sands," of 1,500 tons burden, now under charter to the company, and peculiarly commodious in her cabin arrangements, will be kept running as an extra family boat.

One of the above steamers will keep up the connexion between Acapulco and the other Mexican ports.

The connexion in the Atlantic will be maintained by the United States mail steam ships

† Georgia - - - -	3,000 tons.	
† Ohio - - - -	3,000 „	
Empire City - - -	2,000 „	
Crescent City - - -	1,500 „	
Cherokee - - -	1,300 „	
Philadelphia - - -	1,100 „	
† New steamer - - -	2,000 „	to be a clipper, oscillating engine.

Leaving New York for Chagres on the 11th and 26th of each month.

The new steam ship "El Dorado" and the "† Falcon" will form a direct line between New Orleans and Chagres, leaving at such periods as will ensure as little detention as possible on the Isthmus, and forming with the Pacific steam ships a through line to and from New Orleans and ports in Mexico, California, and Oregon. Passage from New Orleans can be secured from Armstrong, Lawrason & Co., agents at that place.

The fare for through tickets from New York to San Francisco has been reduced from

Dols.	*Dols.*
400 in state rooms to - - - - -	330
330 in lower cabin to - - - - -	290
200 in steerage to - - - - - -	165

The rates from New York to Chagres will be at the lowest adopted by any safe sea steamer between those ports.

Each passenger is allowed 250 lbs. personal baggage free, not exceeding in measurement 10 cubic feet.

† Accepted by Government.

App. No. 6.

Freight will be taken to Chagres at 70 cts. per foot, and from Panama to San Francisco, at the rate of 100 dollars per ton.

For choice of berths apply at the office of the company, 54 and 55, South-street, or at their agency, No. 177, West-street.

	Dols.	
	199,000	Amount paid to Howland & Aspinwall, for semi-monthly mail from Panama.
	149,000	
To St. Francisco - *Dols.*	348,000	

TABLE showing various Routes for Establishing a POSTAL STEAM COMMUNICATION between *England* and her *Australian* Colonies.

By PANAMA.

PLACES.	MILES.	SPEED IN KNOTS.	DAYS.
Southampton to St. Thomas -	3,587	11	14
Chagres - - - -	1,035	11	4
Crossing Isthmus of Panama -	90	- -	2
Tahiti - - - - -	4,500	8½	22
New Zealand - - -	2,205	8½	11
Sydney - - - -	1,155	8½	6
Stoppages - - - -	- -	- -	5
TOTAL - - -	12,572	- -	64

By SINGAPORE and TORRES STRAITS.

Southampton to Gibraltar -	1,172	10	5
Malta - - - - -	988	10	4
Alexandria - - - - -	815	10	4
Crossing Isthmus of Suez -	207	- -	3
Aden - - - - -	1,310	10	6
Point de Galle - - -	2,121	10	9
Singapore - - - -	1,497	8	6
Batavia - - - -	520	8	3
Timor - - - - -	1,240	8	6
Cape York - - - -	935	8	5
Sydney - - - -	1,905	8	10
Stoppages - - - -	- -	- -	5
TOTAL - - -	12,710	- -	66

App. No. 6.

By Ceylon and Cape Leuwin.

PLACES.	MILES.	SPEED IN KNOTS.	DAYS.
Southampton and Point de Galle, as per preceding Route	6,613	10	28
Cape Leuwin - - -	3,129	8	17
Sydney - - - -	1,985	8	10
Stoppages - - - -	- -	- -	5
TOTAL - - -	11,727	- -	60

By Ceylon and Swan River.

PLACES.	MILES.	SPEED IN KNOTS.	DAYS.
Southampton to Point de Galle, as per preceding route -	6,613	10	28
Swan River - - - -	3,060	8	16
Adelaide - - - -	1,345	8	7
Port Philip - - - -	505	8	3
Sydney - - - - -	602	8	3
Stoppages - - - -	- -	- -	5
TOTAL - - -	12,123	- -	62

By Cape of Good Hope.

Plymouth to St. Vincent -	2,260	8	12
Sierra Leone - - - -	906	8	4
Cape of Good Hope - -	3,582	8	19
Wilson's Promontory - -	5,971	8	31
Sydney - - - - -	443	8	2
Stoppages - - - -	- -	- -	3
TOTAL - - -	13,162	- -	71

App. No. 6.

By Cape of Good Hope and Swan River.

PLACES.	MILES.	SPEED IN KNOTS.	DAYS.
Plymouth to Cape of Good Hope, as per preceding table	6,748	8	38
Swan River - - - -	4,672	8	24
Adelaide - - - -	1,345	8	7
Port Philip - - - -	505	8	3
Sydney - - - -	602	8	3
Stoppages - - - -	- -	- -	5
Total - - -	13,872	- -	80

By Plymouth to Sydney direct.

Plymouth to Sydney - -	13,280	8	69

SUMMARY.

PLACES.	MILES.	DAYS.
By Panama - - - - - -	12,572	64
„ Singapore - - - - - - -	12,710	66
„ Ceylon and Cape Leuwin - - -	11,727	60
„ Ceylon and Swan River - - -	12,123	62
„ Cape of Good Hope - - - -	13,162	71
„ Cape of Good Hope and Swan River -	13,872	80
„ Plymouth to Sydney direct - -	13,280	69

E. Chappell.

Appendix, No. 7.

LETTER from *R. R. Smith*, Esq. to Viscount *Jocelyn*, M.P., Chairman, enclosing Return relative to Letters and Newspapers. App. No. 7.

My Lord, 47, Dominick-street, Dublin, 6 May 1851.

WITH reference to my answer to Question 949, put to me on the 29th ultimo, as to the extent of correspondence between Australia and the Cape of Good Hope, I beg leave now to submit a return of the number of letters and newspapers for the years respectively named; as also of the number between Australia and the Mauritius.

I have, &c.

(signed) *R. R. Smith.*

RETURN of the Number of LETTERS and NEWSPAPERS dispatched from the *Australian* Colonies, including *New Zealand*, to the *Cape of Good Hope* and the *Mauritius*, and *vice versâ*, for Twelve Months.

NAME of COLONY.	Year.	LETTERS.				NEWSPAPERS.			
		Cape of Good Hope.		Mauritius.		Cape of Good Hope.		Mauritius.	
		Sent.	Received.	Sent.	Received.	Sent.	Received.	Sent.	Received.
New South Wales:	1844								
Sydney - -	- -	335	389	333	31	630	337	379	—
Melbourne - -	- -	27	- -	2	134	12	–	–	121
Van Diemen's Land -	1844	127	41	131	204	178	*31	119	—
South Australia -	1845	94	171	77	230	380	182	388	130
Western Australia -	1846	48	35	50	195	–	5	19	47
New Zealand - -	1845	15	38	1	–	26	55	—	—
TOTAL - -	- -	646	674	594	794	1,226	610	905	298

* This refers only to newspapers received at Launceston, no account having been kept of the number received at Hobart Town.

Appendix, No. 8.

App. No. 8. LETTER from *H. Currie*, Esq. to the Right Honourable Sir *F. T. Baring*, Bart., M.P., First Lord of the Admiralty.

General Screw Steam Shipping Company,
2 Royal Exchange Buildings,
24 April 1851.

Sir,

ON behalf of the General Screw Steam Shipping Company, I have the honour to propose to Her Majesty's Government to perform the Postal service between England and Australasia in the manner and on the terms following,—

1. That a monthly communication shall be maintained between England and Sydney in ships of not less than 1,400 tons burthen, in 64 days outward and 68 days homeward, at an average rate of eight and a half sea miles (or knots) per hour.

2. That the mails for Van Diemen's Land and Adelaide shall be landed at Port Phillip, in passing; to be thence forwarded to Adelaide and Launceston by branch steamers, which will also collect the mails for the homeward packet.

3. That subordinate to the above, steam-vessels shall be established between Sydney and New Zealand in such manner as to make the service continuous; and to extend to that colony the advantage of a monthly communication with the mother country.

4. That a packet shall leave Sydney for England in two or three days after the arrival of each consecutive ship, thus maintaining a communication to and from Sydney, and consequently a "course of post" in the period of 135 days.

5. That, if required, a branch line of steamers shall be established between Adelaide and Singapore, including Swan River and King George Sound, or Perth and Albany.

6. That Her Majesty's Government will pay for the postal service to and from Sydney, at the rate of 4*s.* per mile, the distance being estimated at 26,500 miles, a sum of 5,300 *l.* per voyage, or 63,600 *l.* per annum.

7. That for the supplemental services from Port Phillip to Adelaide and Launceston, from Sydney to New Zealand, Her Majesty's Government will pay to the company at the rate of 4*s.* per mile of the routes necessarily traversed by the steamers, as determined by future arrangement. App. No. 8.

8. That the several contracts shall be for the term of 10 years from the commencement of the service, and to continue afterwards, with one year's notice to cease on either side.

The company having three ships well advanced in their construction, enables them to engage to commence these services within a comparatively early period. I have thus stated with brevity the propositions of this company, but I beg to inform you that I am prepared to attend you whenever it may be convenient to discuss and develope the whole project.

I have, &c.
(signed) *Henry Currie.*

Appendix, No. 9.

TABLE of DISTANCES from *Southampton* to *Sydney*, &c. App. No. 9.

No. 1.

SOUTHAMPTON to SYDNEY, in Nautic Miles.

Viâ Gibraltar, Malta, Alexandria, Suez, Aden, Point de Galle, Singapore, Batavia, Torres Strait, and outside the Barrier Reef.

	MILES.	
Southampton to Gibraltar	1,172	
Gibraltar to Malta	988	
Malta to Alexandria	815	
Alexandria to Suez	207	
Suez to Aden	1,310	
Aden to Point de Galle	2,121	
		6,613
Point de Galle to Singapore	1,497	
Singapore to Batavia	520	
Batavia to Timor (North point)	1,240	
Timor (North point) to Cape York)	935	
Cape York to Sydney (by Raine Island Passage)	1,905	
TOTAL	12,710	

N. B.—The Inner Route (or inside the Barrier Reef) about 135 miles less.

App. No. 9.

No. 2.

Viâ Gibraltar, Malta, Alexandria, Suez, Aden, Point de Galle, Swan River, Adelaide, and Port Phillip.

	MILES.
Southampton to Point de Galle (*see* No. 1)	6,613
Point de Galle to Swan River	3,059
Swan River to Adelaide	1,345
Adelaide to Port Phillip	505
Port Phiiip to Sydney	602
TOTAL	12,124

No. 3.

By Singapore, Batavia (and Sunda Strait), and Swan River to Sydney.

	MILES.
Southampton to Point de Galle (as in No. 1)	6,613
Point de Galle to Singapore	1,497
Singapore to Batavia	520
Batavia to Swan River (through Sunda Strait)	1,767
Swan River to Adelaide	1,345
Adelaide to Port Phillip	505
Port Phillip to Sydney	602
TOTAL	12,849

No. 4.

Viâ Gibraltar, Malta, Alexandria, Suez, Aden, Point De Galle, Singapore Somaybaya, (through Lombok Strait), Swan River, Adelaide, and Port Phillip.

	MILES.
Southampton to Point de Galle (as in No. 1.)	6,613
Point de Galle to Singapore	1,497
Singapore to Somabaya	760
Somabaya (through Lombok Straits), to Swan River	1,663
Swan River to Adelaide	1,345
Adelaide to Port Phillip	505
Port Phillip to Sydney	602
TOTAL	12,985

No. 5.

No. 5. App. No. 9.

DOVER to SYDNEY.

Viâ Calais, Marseilles, Malta, Alexandria, Suez, Aden, Point de Galle, Singapore, Batavia, Torres Strait, and outside the Barrier Reef.

	MILES.	
Dover to Calais	22	
Calais to Marseilles (by Paris, Dijon, Chalons, and Lyons)	777	
Marseilles to Malta	650	
Malta to Alexandria	815	
Alexandria to Suez	207	9,735
Suez to Aden	1,310	
Aden to Point de Galle	2,121	
Point de Galle to Singapore	1,497	
Singapore to Batavia	520	
Batavia to Timor (North point)	1,240	
Timor (North point) to Cape York	935	
Cape York to Sydney (by Raine Island Passage)	1,905	
TOTAL	12,005	

No. 6.

Viâ Ostend, Trieste, Alexandria, and from thence to Sydney, as in No. 5.

	MILES.
Dover to Ostend	62
Ostend to Trieste (by rail through Brussels, Hanover and Vienna)	1,414
Trieste to Alexandria	1,210
Alexandria to Sydney (as in No. 5)	9,735
TOTAL	12,421

No. 7.

Southampton to Sydney, *viâ* Cape of Good Hope.

	MILES.
Southampton to Bonavista	2,374
Bonavista to Cape of Good Hope	3,846
Cape of Good Hope to Wilson's Promontory (G. Circle) Composite Route, maximum lat. 40½° S.	5,971
Wilson's Promontory to Sydney	443
TOTAL	12,634

App. No. 9.

No. 8.

The Route which a Screw Steam Vessel might follow to avail herself of the S. E. Trade.

	MILES.	
Southampton to Bonavista - - - -	2,374	5,132
Bonavista to Equator, 18° 0′ W. - - -	1,012	
Equator, 18° W. to 28° 0′ S.; 26° 15′ W. - -	1,746	
28° 0′ S.; 26° 15′ W. to Cape (G. Circle) - -	2,304	
Cape to Wilson's Promontory (G. Circle), Composite Route, maximum lat. 47 ½° S. - -	5,687	
Wilson's Promontory to Sydney - - -	443	
TOTAL - - -	13,566	

No. 9.

The Route which a Screw Steam Vessel might follow to avail herself of the S. E. Trade, and without touching at the Cape.

	MILES.
Southampton to 28° 0′ S.; 26° 15′ W. (*see* No. 8) - -	5,132
28° 0′ S.; 26° 15′ W., to Wilson's Promontory (G. Circle) Composite Route, maximum lat. 47 ½° S. - - -	7,705
Wilson's Promontory to Sydney - - - - -	443
TOTAL - - -	13,280

No. 10.

Southampton to Sydney, *viâ* Panama.

Southampton to St. Thomas, Chagres, Panama, and Huaheine.

	MILES.
Southampton to St. Thomas, Lizard to 19° 0′; 63° 30′ W. (Great Circle) - - - - - - - - -	3,587
St. Thomas to Chagres - - - - - - - -	1,025
Chagres to Panama (as per proposed railway) - - -	40
Panama to Huaheine - - - - - - - -	4,562
Huaheine to Sydney - - - - - - - -	3,277
TOTAL - - -	12,491

No. 11.

App. No. 9.

No. 11.

Southampton by Wellington (New Zealand) to Sydney.

	MILES.	
Southampton to St. Thomas	3,587	4,652
St. Thomas to Chagres	1,025	
Chagres to Panama	40	
Panama to Huaheine	4,562	
Huaheine to Wellington	2,320	
Wellington to Sydney (through Cook's Straits)	1,246	
TOTAL	12,780	

No. 12.

Southampton by Tahiti, and Bay of Islands to Sydney.

	MILES.
Southampton to Panama (as in No. 11)	4,652
Panama to Tahiti	4,488
Tahiti to Bay of Islands	2,200
Bay of Islands to Sydney	1,157
TOTAL	12,497

No. 13.

Distances of various Places in the Indian Seas from each other.

	MILES.
Cape of Good Hope to Swan River (Great Circle), lat. of Vertex 44° 49′ S.	4,672
Cape of Good Hope to Mauritius	2,271
Mauritius to Point de Galle	2,084
Point de Galle to Calcutta	1,190
Aden to Bombay	1,650
Bombay to Point de Galle	968
Singapore to Canton	1,520
Sydney to Hobart Town	645

Hydrographic Office,
7 May 1851.

Jno. Burdwood Martin, R. N.

Appendix, No. 10.

PAPERS delivered in by *E. Chappell*, Esq.

A STATEMENT of the Frames, Ages, Tonnage, Powers, Passenger Accommodation, and Stations of STEAMERS Employed by the Royal Mail Steam Packet Company.

Names of Ships.	Statement of the Frames.	Age.	Gross Tonnage.	Power.	Passenger Accommodation.	Stations of Steamers.
					Passengers.	
Avon - -	12 year Ships according to Lloyd's Scale.	9 Years.	1,880	400	For 89	West India
Clyde - -		„ „	1,841	400	„ 102	„ „
Conway -		4 „	929	260	„ 68	„ „
Dee - -		9 „	1,849	400	„ 99	„ „
Derwent -		2 „	794	260	„ 49	„ „
Eagle - -		15 „	630	250	„ 71	„ „
Esk - -		2 „	231	60	„ 28	Buenos Ayres
Great Western		13 „	1,775	400	„ 111	West India
Medway -		9 „	1,894	400	„ 140	Brazil, &c.
Severn - -		„ „	1,886	400	„ 116	West India
Teviot - -		„ „	1,793	400	„ 63	Brazil, &c.
Thames - -		„ „	1,889	400	„ 112	West India
Trent - -		„ „	1,856	400	„ 114	„ „
Tay - -		„ „	1,858	400	„ 83	Brazil, &c.
Prince - -	Iron Ship	New	446	200	„ 50	River Plate

Royal Mail Steam Packet Company,
55, Moorgate-street, London,
6 May 1851.

E. Chappell, Secretary.

STATEMENT of the First Cost of STEAMERS employed by the Royal Mail Steam Packet Company under their Contracts with the Government, distinguishing (when practicable) the Cost of Hull, Engines, and such Furniture, Stores, &c., as were necessary to render them ready for Sea.

		£. s. d.	£. s. d.	£. s. d.
Ship "Clyde"	Hull and engines under one contract) - -	- - -	53,061 12 1	
	Furniture, stores, &c.	- - -	8,114 19 2	
				61,176 11 3
„ "Thames"	Hull - - -	31,527 4 8		
	Engines - -	25,403 - 8		
			56,930 5 4	
	Furniture, stores, &c.	- - -	10,391 3 10	
				67,321 9 2
„ "Tay" -	Hull and engines (under one contract) - -	- - -	53,301 1 6	
	Furniture, stores, &c.	- - -	7,315 8 5	
				60,616 9 11
„ "Medway"	Hull - - -	30,839 - -		
	Engines - -	25,426 5 4		
			56,265 5 4	
	Furniture, stores, &c.	- - -	10,641 9 7	
				66,906 14 11
„ "Dee" -	Hull - - -	29,107 10 -		
	Engines - -	20,000 - -		
			49,107 10 -	
	Furniture, stores, &c.	10,550 16 5	10,550 16 5	
				59,658 6 5
„ "Trent" -	Hull - - -	30,935 - -		
	Engines - -	25,634 18 -		
			56,569 18 -	
	Furniture, stores, &c.	- - -	11,002 10 -	
				67,572 8 -
„ "Teviot"	Hull and engines (in one contract)	- - -	53,343 - -	
	Furniture, stores, &c.	- - -	6,281 4 10	
				59,624 4 10

		£. s. d.	£. s. d.	£. s. d.
Ship "Avon" -	Hull and engines (in one contract) - - -		70,647 18 9	
	Furniture, stores, &c. - - -		13,387 11 9	
				84,035 10 6
„ "Severn"	Hull and engines (in one contract) - - -		70,647 18 8	
	Furniture, stores, &c. - - -		13,387 11 9	
				84,035 10 5
„ "Great Western"	Purchased by the Company in 1847; first cost not known.			
„ "Conway"	Hull - - -	22,950 - -		
	Engines - -	12,100 - -		
			35,050 - -	
	Furniture, stores, &c. - - -		4,695 17 11	
				39,745 17 11
„ "Eagle" -	Purchased by the Company in 1846; first cost not known.			
„ "Derwent"	Hull - - -	16,100 - -		
	Engines - -	12,429 8 2		
			28,529 8 2	
	Furniture, stores, &c. - - -		3,906 10 9	
				32,435 18 11
„ "Esk," (screw schooner)	Hull and engines (in one sum) - - - -		6,250 - -	
	Furniture, stores, &c. - - -		2,869 19 7	
				9,119 19 7
TOTAL, exclusive of "Great Western" and "Eagle" - - - £.				692,249 1 10

Royal Mail Steam Packet Company,
55, Moorgate-street, London, 6 May 1851.

E. Chappell,
Secretary.

Purchased since the annexed Return was made up:

"Prince," Iron Vessel.

Cost of hull, engines, furniture, stores, &c. - - - £. 16,500

ABSTRACT of the Voyages of the Royal Mail Steam Packet Company's SHIPS, from the 1st July to the 31st December 1850.

Date of Departure.	Date of Return.	Name of Ship.	Time on Voyage.			Average Speed per Hour.	Distance Run, Miles.
			Days.	Hours.	Minutes.		
1850:	1850:						
2 July -	18 September	Great Western -	77	16	45	8 ¼ knots	11,334
17 July -	29 „	Severn - -	74	0	45	8 ¾ „	11,410
2 August -	4 October -	Trent - -	63	8	50	8 $\frac{5}{8}$ „	9,874
17 „	19 „	Thames - -	63	0	55	9 „	9,874
2 September	10 November	Dee - - -	69	4	30	7 „	9,874
17 „	19 „	Medway - -	62	22	30	8 $\frac{5}{8}$ „	9,874
2 October -	- - -	Great Western -	Voyage not yet completed.				
17 „	21 December	Avon - -	65	5	30	8 ¼ „	9,874
	1851:						
2 November	7 January -	Tay - - -	66	8	10	8 „	9,874
18 „	22 „	Trent - -	64	19	30	7 $\frac{1}{8}$ „	9,874
2 December	5 February -	Thames - -	65	2	45	8 $\frac{3}{8}$ „	9,874
17 „	25 „	Medway - -	70	0	40	8 „	9,874

Royal Mail Steam Packet Company,
55, Moorgate-street, London, 6 May 1851.

E. Chappell,
Secretary.

App. No. 10. TABLES showing the existing Regulations as to Freight and Fares from all Places Intermediate and Terminal.

ROYAL MAIL STEAM PACKET COMPANY.

WEST INDIA PASSENGER FARES, which include the use of Bedding and Linen, Steward's Fees and all other Charges, except for Wines, Spirits, Malt Liquors and Mineral Waters.

This Company's steam-ships leave Southampton at two P.M. on the 2d and 17th of each month, unless the latter should be a Sunday, and then on the day following.

Passengers, parcels and packages booked, as heretofore, at the Company's office, 55, Moorgate-street, London. At Southampton, passengers booked by Mr. Duffell, Company's office, Winkle-street; and parcels and packages by Messrs. Dunlop and Schoales, shipping agents, No. 2, Winkle-street, and at the Docks.

ATLANTIC VOYAGES.

OUTWARD.

Leaves Southampton each Month.	DESTINATION.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single.	Double each Berth.
By Steamer.		£.	£.	£.	£.
2d and 17th	Antigua	50	35	40	30
2d and 17th	Barbadoes	50	35	40	30
2d and 17th	Carriacou	50	35	40	30
2d and 17th	Carthagena	60	40	50	35
2d and 17th	Chagres	60	40	50	35
2d and 17th	Demerara	50	35	40	30
2d and 17th	Dominica	50	35	40	30
2d and 17th	Grenada	50	35	40	30
2d and 17th	Grey Town	60	40	50	35
2d and 17th	Guadaloupe	50	35	40	30
17th	Havana	60	40	45	35
17th	Honduras	60	40	45	35
17th	Jacmel	55	35	40	30
2d and 17th	Jamaica	55	35	40	30
2d and 17th	Martinique	50	35	40	30
2d and 17th	Montserrat	50	35	40	30
2d and 17th	Nevis	50	35	40	30
2d and 17th	Porto Rico	50	35	40	30
2d and 17th	St. Kitt's	50	35	40	30
2d and 17th	St. Lucia	50	35	40	30
2d and 17th	St. Thomas	50	35	40	30
2d and 17th	St. Vincent	50	35	40	30
2d and 17th	Santa Martha	60	40	50	35
2d	Tampico	65	45	50	40
2d and 17th	Tobago	50	35	40	30
2d and 17th	Trinidad	50	35	40	30
2d	Vera Cruz	65	45	50	40
	Atlantically by Steamer, and Intercolonially by Sailing Vessel.				
17th	Nassau	55	40	45	35

Atlantic Voyages—*continued.* App. No. 10.

HOMEWARD.

Due at Southampton each Month.	FROM WHAT PLACES.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single.	Double each Berth.
By Steamer.		£.	£.	£.	£.
7th and 22d	Antigua - - -	50	35	40	30
7th and 22d	Barbadoes - - -	50	35	40	30
7th and 22d	Carriacou - - -	50	35	40	30
7th and 22d	Carthagena - - -	60	40	50	35
7th and 22d	Chagres - - -	60	40	50	35
7th and 22d	Demerara - - -	50	35	40	30
7th and 22d	Dominica - - -	50	35	40	30
	Fayal (if touched at) -	17	17	17	17
7th and 22d	Grenada - - -	50	35	40	30
7th and 22d	Grey Town - - -	60	40	50	35
7th and 22d	Guadaloupe - - -	50	35	40	30
22d	Havana - - -	60	40	45	35
22d	Honduras - - -	60	40	45	35
22d	Jacmel - - - -	55	35	40	30
7th and 22d	Jamaica - - -	55	35	40	30
7th and 22d	Martinique - - -	50	35	40	30
7th and 22d	Montserrat - - -	50	35	40	30
7th and 22d	Nevis - - - -	50	35	40	30
7th and 22d	Porto Rico - - -	50	35	40	30
7th and 22d	St. Kitt's - - -	50	35	40	30
7th and 22d	St. Lucia - - -	50	35	40	30
7th and 22d	St. Thomas - - -	50	35	40	30
7th and 22d	St. Vincent - - -	50	35	40	30
7th	Tampico - - -	65	45	50	40
7th and 22d	Tobago - - -	50	35	40	30
7th and 22d	Trinidad - - -	50	35	40	30
7th	Vera Cruz - - -	65	45	50	40
	Atlantically by Steamer, and Intercolonially by Sailing Vessel.				
22d	Nassau - - - -	55	40	45	35

The difference in the rates of passage-money shown above refers merely to the sleeping cabin; in all other respects the passengers will be precisely on the same footing.

No berth is considered engaged until the whole fare is paid.

N.B.—A limited number of artizans, emigrants, &c., to be victualled on the same footing as the ship's crew, finding their own hammocks and bedding, will be conveyed, when there is room for them, from Southampton to the West Indies, Chagres or Mexico, for 20 *l.* each.

French and English cooks on board.

Each ship carries an experienced surgeon.

Return tickets issued, with an abatement of 25 per cent. on the passage-money. Such tickets to be paid for when issued, and not to be transferable. To be available if the parties holding the same embark on the return voyage within six calendar months from the date of their first embarkation.

INTERCOLONIAL VOYAGES.—WEST INDIES, &c.

FARES IN SILVER DOLLARS.

PLACES.	Antigua.	Barbadoes.	Carriacou.	Carthagena.	Chagres.	Demerara.	Dominica.	Grenada.	Guadaloupe.	Grey Town.	Havana.	Honduras.	Jacmel.	Jamaica.	Martinique.	Montserrat.	Nassau.	Nevis.	St. Juan's, Porto Rico.	St. Kitt's.	St. Lucia.	Santa Martha.	St. Thomas.	St. Vincent.	Tampico.	Tobago.	Trinidad.	Vera Cruz.
Antigua	–	25	25	55	65	40	12	25	8	75	80	85	40	50	15	8	55	8	25	10	15	50	15	25	115	35	30	110
Barbadoes	20	–	15	70	80	20	15	15	20	90	95	100	55	65	15	20	70	25	40	25	12	65	30	12	130	20	20	125
Carriacou	25	20	–	70	80	35	20	5	20	90	95	100	55	65	20	25	70	25	40	25	20	65	30	5	130	20	12	125
Carthagena	75	85	85	–	15	100	80	85	75	30	115	120	75	85	80	70	90	70	60	70	80	–	50	85	150	95	95	145
Chagres	85	95	95	25	–	110	90	95	85	15	125	130	85	95	90	80	100	80	70	80	90	–	60	95	160	105	105	155
Demerara	40	20	30	90	100	–	35	30	40	110	115	120	75	85	35	40	90	45	60	45	30	85	50	30	150	35	30	145
Dominica	12	25	25	65	75	40	–	25	8	85	90	95	50	60	8	12	65	15	35	15	8	60	25	25	125	35	30	120
Grenada	25	20	5	70	80	35	20	–	20	90	95	100	55	65	20	25	70	25	40	25	20	65	30	10	130	20	10	125
Guadaloupe	8	25	25	60	70	40	8	25	–	80	85	90	45	55	8	8	60	12	30	12	12	55	20	25	120	35	30	115
Grey Town	100	110	110	40	15	125	105	110	100	–	140	145	100	110	105	95	115	95	85	95	105	–	75	110	175	120	120	170
Havana	110	120	120	125	135	135	115	120	110	145	–	30	65	40	115	105	125	105	80	105	115	120	85	120	105	130	130	100
Honduras	110	120	120	125	135	135	115	120	110	145	30	–	75	50	115	105	125	105	80	105	115	120	85	120	115	130	130	110
Jacmel	55	65	65	70	80	80	60	65	55	90	50	60	–	20	60	50	70	50	25	50	60	65	30	65	85	75	75	80
Jamaica	70	80	80	85	95	95	75	80	70	105	30	40	25	–	75	65	85	65	40	65	75	80	45	80	65	90	90	60
Martinique	12	25	25	65	75	40	8	25	8	85	90	95	50	60	–	12	65	15	35	15	8	60	25	25	125	35	25	120
Montserrat	8	25	25	55	65	45	15	25	12	75	80	85	40	50	15	–	55	8	25	8	15	50	15	25	115	35	30	110
Nassau	75	85	85	90	100	100	80	85	75	110	115	120	75	85	80	70	–	70	60	70	80	85	50	85	150	95	95	145
Nevis	12	30	30	50	60	50	20	30	15	70	75	80	35	50	20	8	50	–	20	4	20	50	12	30	115	40	35	110
St. Juan's, Porto Rico	35	50	50	50	60	60	40	50	35	70	65	70	25	30	40	30	50	30	–	30	40	50	12	50	95	60	55	90
St. Kitt's	12	30	30	50	60	50	20	30	15	70	75	80	35	50	20	8	50	4	20	–	20	50	12	30	115	40	35	110
St. Lucia	15	15	20	70	80	30	10	20	15	90	95	100	55	65	8	15	70	20	40	20	–	65	30	20	130	30	20	125
Santa Martha	–	–	–	8	25	–	–	–	–	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
St. Thomas	25	35	35	40	50	50	30	35	25	60	65	70	25	35	30	20	40	20	10	20	30	35	–	35	100	45	45	95
St. Vincent	20	15	5	75	85	30	15	10	20	95	100	105	60	70	15	20	75	25	45	25	15	70	35	–	135	25	15	130
Tampico	145	155	155	160	170	170	150	155	145	180	105	115	100	75	150	140	160	140	115	140	150	155	120	155	–	165	165	12
Tobago	30	25	25	80	90	35	25	15	30	100	105	110	65	75	25	30	80	35	50	35	25	75	40	25	140	–	10	135
Trinidad	30	25	12	80	90	35	30	10	30	100	105	110	65	75	25	30	80	35	50	35	25	75	40	15	140	15	–	135
Vera Cruz	140	150	150	155	165	165	145	150	140	175	100	110	95	70	145	135	155	135	110	135	145	150	115	150	12	160	160	–

In all cases where passengers are subject in the ordinary course of service, as per Tables, to a detention of more than four days, that is, while waiting the arrival of the vessel by which they are to prosecute their voyage, they will have to defray the expenses of their victualling during such period of detention.

REGULATIONS.

I. HOMEWARD passengers taking a single cabin, are not to have another passenger intruded upon them, unless the number of passengers should accumulate by successive transhipments so as to render it unavoidable to occupy both bed births, in which case the charge will be only as for a double cabin birth throughout.

II. On arrival of the homeward steamer at St. Thomas, the spare cabin accommodation, whether forward or aft, will be divided between passengers from Jamaica and other places west of St. Thomas, and the passengers from the windward routes; care being taken that choice of cabins be allowed alternately (as far as their numbers extend) to a passenger from each direction.

III. The captains will be most careful to avoid all personal preference or partiality in allotting accommodation on board the Company's ships.—Within the prescribed limits, priority of choice is always to be given according to the dates on which passengers were originally booked, and the passage-money paid. If paid through the Company's agent, he will be careful, when he hands the money to the captain, to furnish also the date when it is paid, for notation on the passage ticket.

IV. No passenger booking for a double cabin birth, forward or aft, is to be accommodated in a cabin by himself, so long as he can be placed in a cabin of the same class with another passenger, booked for a double cabin berth.

V. Whenever there may be more passengers than can be accommodated with cabin berths, and who may in consequence be obliged to sleep in cots, or otherwise not in any cabin, an abatement of 5 *l.* from the lowest cabin rate will be made upon such occasions, but no passenger will be allowed this abatement so long as there is a cabin bed berth unoccupied.

VI. When passengers fail to obtain on board the ship conveying them to England, the same sort of accommodation as that for which they originally paid, the captains will furnish to each of such persons a certificate specifying the description of berth paid for, and the accommodation subsequently afforded on the voyage to Southampton, which document will entitle the respective parties, on application at the Company's office in London, to payment of the abatements.

VII. Although ladies may have sleeping berths allotted to them in the ladies' saloon, yet it is to be open for the use of all the ladies on board, between 9 a.m. and 9 p.m., every day.

VIII. Only troops, common sailors, labourers, or others not superior to these classes of society, to be conveyed as deck passengers. To find their own provisions and bedding, and not admitted abaft the chimney. To pay one-fourth the cabin fare; and only to be conveyed intercolonially.

IX. Passengers' servants cannot be booked as deck passengers.

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X. Children of cabin passengers under three years of age carried free of charge; above three years, and under eight years, to pay one-fourth the cabin-passage rate paid by their parents; above eight years, and under twelve years, to pay one-half ditto, but entitled to a separate cabin.

XI. Passengers' male servants to pay one-half, and female two-thirds the cabin-passage rate paid by their employers.

XII. An abatement of one-sixth of the established rate is to be made in favour of families, but only in cases where the amount of passage-money (if charged in full for the whole party) would be equal to the full charge for four adult cabin passengers. This abatement however is not to be applicable where cabins are taken on the main deck; and the term family is only to comprehend parents, their children and their servants.

XIII. Passengers not proceeding after taking their passage, to forfeit half the passage-money.

XIV. The Spanish dollar to be taken in all the British possessions at the rate of 4 *s.* 2 *d.* sterling; the doubloon at 64 *s.*; the American eagle of 10 dollars at 2 *l.*

XV. In Foreign ports, the fares specified in the intercolonial table are to be paid in silver dollars, or their equivalent in other current coin; this rule applies also to the British colonies, except that notes of the West India Colonial Bank are to be taken as equivalent, when convenient to all parties. Five-franc pieces are to be received at the rate of four shillings each, when tendered in payment of passage-money, but only by persons embarking at or for Martinique or Guadaloupe.

XVI. Dogs to be charged at one-eighth the fare paid by their owners.

XVII. Merchandize cannot be carried under the name of luggage. All specie, bullion, or other treasure, carried by passengers, above the value of 150 *l.*, to be shipped as treasure, and charged for at the established rates of freight.

XVIII. Each adult passenger allowed to carry luggage, free o charge, to the extent of 20 cubic feet measurement, children and servants in proportion; and with a view to prevent mistakes on landing or transhipment, passengers are strongly recommended to label each parcel of their luggage with their name and destination.

XIX. All extra luggage to be charged as for measurement goods, but without primage.

XX. Should any occurrence prevent the vessels from meeting at the appointed places, the Company does not hold itself responsible for the maintenance of passengers, or for their loss of time during any detention consequent thereon; nor for any delay arising out of accidents.

XXI. There is to be no difference in the fares between the fore and

and after cabins, nor between single and double cabins, so far as mere intercolonial passages are concerned; the difference of fares being only intended to apply to transatlantic passages out and home.

XXII. Trasatlantic passengers are always to have priority of choice of cabins over intercolonial passengers, whether previously booked or not. This is not, however, to extend to the displacing of any intercolonial passenger, while any other cabin berth of similar description is vacant.

XXIII. Should any outward or homeward-bound passenger, who was originally booked for a fore cabin, shift to an after cabin, or from a double to a single cabin, he is to be charged the superior fare throughout.

XXIV. Should any homeward-bound passenger originally booked for an after or single cabin, upon subsequent transhipnent fail to obtain similar accommodation, he is to be charged the inferior fare throughout.

XXV. Should any outward-bound passenger, originally booked for an after or single cabin, upon subsequent transhipment fail to obtain similar accommodation (as this can only occur when the voyage is nearly finished), he is to be allowed a deduction of five shillings per day for every day he is compelled to occupy such inferior accommodation.

XXVI. Intercolonial passengers must not be booked farther than they can be conveyed by the vessel in which they embark, or by other vessels, expected to be met with, to which they can be directly transferred.

XXVII. Passengers are not allowed to take on board wines, spirits, or other liquors for use during the voyage, an ample stock thereof being provided on board, at moderate prices.

XXVIII. Passengers are earnestly recommended to conform to established regulations as respects passports, &c., especially in foreign ports. Passports are now required by persons landing at the ports of Mexico.

XXIX. The Company's steam tender will convey passengers on board, free of charge, at Southampton, leaving the docks for that purpose not later than 11.30 a.m. on the day of sailing. Baggage, except carpet bags and hat boxes, must be shipped the previous day. No heavy baggage will be received on board on the day of sailing.

XXX. The Company does not hold itself responsible for any loss, damage, or detention of luggage, under any circumstances.

XXXI. Passengers intending to embark abroad will apply to the agents, but the passage-money is to be paid on board, either by the agents (if they have received it) or by the passengers themselves.

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CARGO.

Shippers are respectfully informed that a limited quantity of goods can now be forwarded through the Agents of the Royal Mail Steam-packet Company,

From England to Barbadoes, Demerara, Porto Rico, Trinadad, Jamaica, St. Thomas, Honduras, Chagres, Grey Town, Jacmel (Hayti).

To England from Barbadoes, Jamaica, St. Thomas, Porto Rico, Demerara, Tampico, Vera Cruz, Havana, Honduras, Trinidad, Carthagena, Chagres, Grey Town.

And Intercolonially between Barbadoes, Demerara, Porto Rico, Jacmel (Hayti), Trinadad, St. Thomas, Jamaica, Honduras, Chagres, Grey Town.

And *to* these places, *from* Havana and other Foreign Ports, but cargo cannot be carried *to* Foreign Ports, with the before-mentioned exceptions, but by special permission.

*** Specie may be shipped by the Royal Mail Steam Packets for any port at which they touch.

RATES OF FREIGHT:

Outward Freight, to be prepaid.

For measurement goods (received in London, if desired), 5 *l.* per ton, or 2 *s.* 6 *d.* per cubic foot, with 5 per cent. primage. Heavy goods (from Southampton only) 4 *l.* per ton weight, and 5 per cent. primage. Machinery as per agreement. Cinnamon, 1 *d.* per lb.

Quicksilver - - -	2 per cent. on value.
Plate - - - -	ditto ditto.

Specie, Jewellery, and precious Stones, 1 per cent. from Southampton, or 1 ⅛ from London.

For particulars apply to Mr. J. Dawson, shipping agent, 9, Billiter-square, London; or Messrs. Dunlop and Schoales, shipping agents, Southampton.

No bills of lading will be given for less freight than one guinea.

Homeward Freight, payable in England:

(No bill of lading for merchandize will be given for less freight than one guinea.)

Specie,—deliverable at the Bank of England	1 ⅛	per cent.
Platina, ditto - - ditto - on value	1 ⅛	„
Diamonds, Pearls Emeralds, and all other precious Stones, unset, being exempt from duty, deliverable at the Bank of England - - - - - - - - on value	1 ⅛	„
Ditto - ditto, deliverable at Southampton	1	„
Jewellery and Plate, subject to duty, deliverable at Southampton - on value	2	„
Vanilla - ditto - - ditto - - ditto	1 ⅛	„

Ginger

Ginger	7 *l.* per ton weight.
Coffee and Cocoa	5 *l.* „
Arrow Root	5 *l.* „
Sarsaparilla and other dry drugs	1 ½ *d.* per lb.
Peruvian Bark	1 ¼ *d.* „
Pimento, Cochineal, Indigo, Gums, and Bees' Wax	1 *d.* „
Pines, Oranges, or other Green Fruits or Plants, packed in hampers, barrels, or boxes	5 *l.* per ton measurement, of 40 cubic feet.
Cigars and Leaf Tobacco	5 *l.* per ditto ditto.
Measurement goods	3 *s.* 6 *d.* per cubic foot.
Cases containing Preserved Turtle	2 *s.* 6 *d.*
Turtle, on the quantity landed alive at Southampton; but the Company not liable for losses by death or disaster	1 *l.* 5 *s.* per cwt.

Five per cent. primage to be paid on all homeward freight, except for specie, jewellery, plate, platina, precious stones, vanilla, and parcels.

Small parcels of succades, arrow root, &c., charged at the present rate for parcels and packages.

No package of specie, platina, pearls, precious stones, or jewellery, to be conveyed at a less charge than five silver dollars.

Outward and homeward packages and parcels will be received, as heretofore, at the London office; by Messrs. Dunlop and Schoales, Southampton; and by the agents abroad; at the following rates, to be prepaid.

One cubic foot and under	7 *s.* 6 *d.* per package.
Above 1 foot and not exceeding 2	11 *s.* 6 *d.* „
Above 2 feet and not exceeding 3	15 *s.* „

Above 3 cubic feet, 5 *s.* per foot, up to 12 feet; any excess beyond that to be charged at the same rates as measurement cargo.

Quarterly publications and pamphlets, 2 *s.* each.—Monthly publications, 1 *s.* each.

Intercolonial Freight (Goods), payable at the Port of Shipment or Delivery.

(No bill of lading for merchandize will be given for less freight than two and a half silver dollars.)

3 *l.* 10 *s.* per ton measurement of 40 cubic feet, without primage.

Indigo and other dry drugs, Cochineal, 1 *d.* per lb., without primage.

Dry and Wet Provisions.

From St. Thomas to Barbadoes, Trinidad, Demerara, Jacmel, or Jamaica	1 silver dollar per barrel.
„ to Grey Town	1 ½ „

Specie, Jewellery, Pearls, Diamonds, and other Precious Stones.

Exceeding 2,500 miles, 1 per cent.

Exceeding 1,000 miles, and not above 2,500 miles, ¾ per cent.

Not exceeding 1,000 miles, ½ per cent.

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The distance between St. Thomas or intermediate places and Demerara, is to be considered as not exceeding 1,000 miles.

No sums under 5,000 dollars are to be conveyed, however short the distance, at a lower rate than ½ per cent.; but when larger amounts are to be remitted from one British colony to another, or between any places visited by the Company's vessels eastward of Jamaica, provided, in either case, the distance is within 800 miles, the rate will be ¼ per cent., and no package is to be taken at a less freight than five silver dollars. The tables of routes to determine the distances.

*** Packages and parcels, as heretofore, to be prepaid at the port of shipment, to be charged one-fifth less than the transatlantic scale.

ON TREASURE FROM PANAMA.

The following rates have been established by the Royal Mail Steam Packet Company in addition to the freight charged by the Pacific Steam Navigation Company, or other parties delivering treasure to the agent of the Royal Mail Steam Packet Company at Panama, for conveyance to the undermentioned places, such charges to include transport across the Isthmus, and all other expenses thence to the place of destination.

Specie and Bullion from Panama to Bank of England,	$1\frac{3}{8}$	per cent.
„ „ British Guiana, Vera Cruz, and Tampico	$1\frac{2}{8}$	„
„ „ St. Domingo, Porto Rico, St. Thomas, the Windward Islands, Havana, Honduras, Nassau, and Jamaica - -	$1\frac{1}{8}$	„
„ „ Carthagena and Grey Town - -	$\frac{7}{8}$	„
Pearls, Emeralds, and all other Precious Stones, unset, being exempt from duty, from Panama to the Bank of England, on value - - - - - -	$1\frac{7}{8}$	„
Jewellery, subject to duty, from Panama to Southampton, on value - - - - - - -	$2\frac{1}{8}$	„

N.B. The Pacific Company's charge on Specie, &c., from any port in Chili or Peru to Panama, for transfer to the Royal Mail Steam Packets, is ⅞ per cent.

*** Double freight will be imposed in all cases of detection where attempts may be made by smuggling specie, &c., to evade the Company's established charges.

Preference always to be given to transatlantic over intercolonial cargo.

Goods and packages arriving from places abroad, will be lodged in the Custom-house, Southampton; and in the West Indies with the Company's agents, whence they will have to be retired by the parties to whom they may be addressed; or at Southampton, Messrs. Dunlop and Schoales, shipping agents, will clear and forward them, if commissioned to do so by the consignees, at their expense.

Oil, Sugar, Molasses, Cotton, and Spirits, not to be shipped; nor Gunpowder, Vitriol, or any other article of an inflammable description.

By Order of the Court of Directors,

London, 55, Moorgate-street, 20 April 1851.

Edward Chappell, Secretary.

ROYAL MAIL STEAM PACKET COMPANY. App. No. 10.

Brazil and River Plate Passenger Fares, which include the use of bedding and linen, steward's fees, and all other charges, except for wines, spirits, malt liquors, and mineral waters.

This Company's steam ships leave Southampton on the 9th of each month, unless it should be a Sunday, and then on the day following, for Lisbon, Madeira, Teneriffe, Cape de Verds, Pernambuco, Bahia, Rio Janeiro, Monte Video, and Buenos Ayres.

Passengers, parcels, and packages booked at the Company's office, 55, Moorgate-street, London; at Southampton, passengers booked by Mr. Duffell, Company's office, Winkle-street; and parcels and packages by Messrs. Dunlop & Schoales, shipping agents, No. 2, Winkle-street, and at the docks.

ATLANTIC VOYAGES.

OUTWARD.

Leaves Southampton each Month.	DESTINATION.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single	Double each Berth.
		£.	£.	£.	£.
9th.	Madeira - -	30	22	25	20
„	Teneriffe - -	35	25	30	22
„	St. Vincent (Cape de Verds) -	45	30	35	25
„	Pernambuco -	50	35	45	30
„	Bahia - - -	52	37	47	32
„	Rio Janeiro - -	60	45	50	35
„	Monte Video -	70	50	60	45
„	Buenos Ayres -	70	50	60	45

HOMEWARD.

Due at Southampton each Month.	FROM WHAT PLACE.	AFTER CABINS.		FORE CABINS.	
		Single.	Double each Berth.	Single.	Double each Berth.
		£.	£.	£.	£.
14th.	Madeira - -	30	22	25	20
„	Teneriffe - -	35	25	30	23
„	St. Vincent (Cape de Verds -	45	30	35	28
„	Pernambuco -	55	40	50	35
„	Bahia - - -	57	42	52	37
„	Rio Janeiro -	65	50	55	40
„	Monte Video -	75	55	65	50
„	Buenos Ayres -	75	55	65	50

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The difference in the rates of passage-money shewn above refers merely to the sleeping cabin; in all other respects the passengers will be precisely on the same footing.

No berth is considered engaged until the whole fare is paid.

A limited number of artizans, emigrants, &c. to be victualled and accommodated on the same footing as the ship's crew, finding their own hammocks and bedding, will be conveyed when there is room for them, from Southampton to the Brazils, for 20*l.* each; and from Lisbon to the Brazils for 15*l.* each.

Each ship carries an experienced surgeon.

Return tickets issued, with an abatement of 25 per cent. on the passage-money. Such tickets to be paid for when issued, and not to be transferable. To be available if the parties holding the same embark on the return voyage within six calendar months from the date of their first embarkation.

French and English cooks on board.

Intermediate Voyages.

Fares in silver dollars.

Estimated Time for Leaving Each Place.		PLACES.	Lisbon.	Madeira.	Teneriffe.	St. Vincent.	Pernambuco.	Bahia.	Rio Janeiro.	Monte Video.	Buenos Ayres.
OUTWARD.	HOMEWARD.										
15th, 6 a.m.	7th, 10 p.m.	Lisbon -	- -	35	55	90	£.8 less in each case than the fare from Southampton.				
18th, 1 p.m.	4th, 3 a.m.	Madeira -	35	- -	20	60	120	130	140	200	205
19th, midnight	2nd, 10 a.m.	Teneriffe -	55	20	–	50	120	130	140	200	205
25th, 10 a.m.	28th, 6 a.m.	St. Vincent -	100	70	60	–	75	80	100	160	160
3rd, 2 a.m.	18th, 10 a.m.	Pernambuco	135	135	90	- -	25	50	110	120	
5th, 5 a.m.	16th, 1 a.m.	Bahia -	145	145	95	25	- -	40	100	110	
10th, 11 a.m.	12th, 11 a.m.	Rio Janeiro -	155	155	115	50	40	- -	60	70	
17th, 5 a.m.	2nd, 1 p.m.	Monte Video	215	215	175	110	100	60	- -	12	
	1st, 9 a.m.	Buenos Ayres	220	220	180	120	110	70	12	—	

£.8 less in each case than the fare to Southampton.

Regulations.

I. The captains will be most careful to avoid all personal preference or partiality in allotting accommodation on board the Company's ships. Priority of choice is always to be given according to the dates on which passengers were originally booked, and the passage-money paid. If paid through the Company's agent, he will be careful, when he hands the money to the captain, to furnish also the date when it is paid, for notation on the passage ticket.

II. No passenger booking for a double cabin berth, forward or aft, is to be accommodated in a cabin by himself, so long as he can be placed in a cabin of the same class with another passenger, booked for a double cabin berth.

III. Whenever there may be more passengers than can be accommodated with cabin berths and who may in consequence be obliged to

to sleep in cots, or otherwise not in any cabin, an abatement of 5*l.* from the lowest cabin rate will be made upon such occasions, but no passenger will be allowed this abatement so long as there is a cabin bed berth unoccupied.

IV. When passengers from the River Plate fail to obtain on board the ship, conveying them to England, the same sort of accommodation as that for which they originally paid, the captains will furnish to each of such persons a certificate specifying the description of berth paid for and the accommodation subsequently afforded on the voyage to Southampton, which document will entitle the respective parties, on application at the Company's office in London, to payment of the abatements.

V. Although ladies may have sleeping berths allotted to them in the ladies' saloon, yet it is to be open for the use of all the ladies on board, between 9 a.m. and 9 p.m. every day.

VI. Only troops, common sailors, labourers, or others not superior to those classes of society, to be conveyed as deck passengers. To find their own provisions and bedding, and not admitted abaft the chimney. To pay one-fourth the cabin fare; and only to be conveyed intermediately.

VII. Passengers' servants cannot be booked as deck passengers.

VIII. Children of cabin passengers under three years of age carried free of charge; above three years, and under eight years, to pay one-fourth the cabin-passage rate paid by their parents; above eight years and under twelve years, to pay one-half ditto, but not entitled to a separate cabin.

IX. Passengers' male servants to pay one-half, and female two-thirds the cabin-passage rate paid by their employers.

X. An abatement of one-sixth of the established rate is to be made in favour of families, but only in cases where the amount of passage-money (if charged in full for the whole party) would be equal to the full charge for four adult cabin passengers. This abatement however is not to be applicable where cabins are taken on the main deck; and the term family is only to comprehend parents, their children, and servants.

XI. Passengers not proceeding after taking their passage, to forfeit half the passage-money.

XII. The fares specified in the intermediate Table are to be paid in silver dollars, or their equivalent in other current coin.

XIII. Dogs to be charged at one-eighth the fare paid by their owners.

XIV. Merchandize cannot be carried under the name of luggage. All specie, bullion, or other treasure carried by passengers, above the value of 150*l.*, to be shipped as treasure, and charged for at the established rates of freight.

XV. Each

App. No. 10.

XV. Each adult passenger allowed to carry luggage, free of charge, to the extent of 20 cubic feet measurement, children and servants in proportion; and with a view to prevent mistakes on landing or transhipment, passengers are strongly recommended to label each parcel of their luggage with their name and destination.

XVI. All extra luggage to be charged as for measurement goods, but without primage.

XVII. Should any occurrence prevent the vessels from meeting at Rio Janeiro, the Company does not hold itself responsible for the maintenance of passengers, or for their loss of time during any detention consequent thereon; nor for any delay arising out of accidents.

XVIII. Transatlantic passengers are always to have priority of choice of cabins over intermediate passengers, whether previously booked or not. This is not however to extend to the displacing of any intermediate passenger, while any other cabin berth of similar description is vacant.

XIX. Should any outward or homeward-bound passenger, who was originally booked for a fore cabin, shift to an after cabin, or from a double to a single cabin, he is to be charged the superior fare throughout.

XX. Passengers are not allowed to take on board wines, spirits, or other liquors for use during the voyage, an ample stock thereof being provided on board, at moderate prices.

XXI. Passengers are earnestly recommended to conform to established regulations as respects passports, &c.

XXII. The Company's steam tender will convey passengers on board, free of charge, at Southampton, leaving the docks for that purpose not later than 30 minutes past 11 a.m., on the day of sailing. Baggage, except carpet bags and hat boxes, must be shipped the previous day. No heavy baggage will be received on board on the day of sailing.

XXIII. The Company does not hold itself responsible for any loss, damage, or detention of luggage, under any circumstances.

XXIV. Passengers intending to embark abroad will apply to the agents, but (except at Lisbon) the passage-money is to be paid on board, either by the agents (if they have received it) or by the passengers themselves.

XXV. At Lisbon the passage-money will be received by the Company's agent, who will book all passengers for priority of choice of cabins, without favour or partiality, in the order in which he receives payment of their passage-money.

Cargo.

Shippers are respectfully informed that a limited quantity of goods can be forwarded through the agents of the Royal Mail Steam Packet Company, from England to Bahia, Rio Janeiro, and Buenos Ayres.

To England from Buenos Ayres, Monte Video, Rio Janeiro, Bahia, Pernambuco, St. Vincent (Cape de Verds), Teneriffe, Madeira.

Specie may be shipped by the Royal Mail Packets for any port at which they touch, except as relates to Lisbon on the outward voyage.

Rates of Freight.

Outward Freight to be Prepaid.

For measurement goods (received in London if desired) 5*l.* per ton, or 2*s.* 6*d.* per cubic foot, with 5 per cent. primage. Heavy goods (from Southampton only) 4*l.* per ton weight, and 5 per cent. primage. Machinery as per agreement. Cinnamon 1*d.* per lb. Quicksilver 2 per cent. on value. Plate 2 per cent. on value. Specie, jewellery, and precious stones 1 per cent. from Southampton, or 1 ⅛ from London.

For particulars apply to Mr. J. Dawson, shipping agent, 9, Billiter-square, London, or Messrs. Dunlop and Schoales, shipping agents, Southampton.

No bills of lading will be given for less freight than one guinea.

Homeward Freight, Payable in England.

No bill of lading for merchandize will be given for less freight than one guinea.

Specie,—deliverable at the Bank of England or Southampton	1⅛ per cent.
Platina, deliverable at the Bank of England or Southampton, on value	1⅛ „
Diamonds, pearls, emeralds, and all other precious stones, unset, being exempt from duty, deliverable at the Bank of England, on value	1⅛ „
Ditto - ditto, deliverable at Southampton	1 „
Jewellery and plate, subject to duty, deliverable at Southampton, on value	2 „
Vanilla - ditto - ditto - - - ditto	1⅛ „
Ginger	7*l.* per ton weight.
Coffee and cocoa	5*l.* „
Arrow-root	5*l.* „
Sarsaparilla and other dry drugs	1½*d.* per lb.
Peruvian Bark	1¼*d.* „
Pimento, cochineal, indigo, gums, and bees' wax	1*d.* „
Pines, oranges, and other green fruits or plants, packed in hampers, barrels, or boxes	5*l.* per ton measurement, of 40 cubic feet.

Cigars

App. No. 10.

Cigars and leaf tobacco - - - -	3*l.* per ton measurement, of 40 cubic feet.
Measurement goods - - - -	3*s.* 6*d.* per cubic foot.
Cases containing preserved turtle - -	2*s.* 6*d.* ,,
Turtle, on the quantity landed alive at Southampton, but the Company not liable for losses by death or disaster - -	1*l.* 5*s.* per cwt.

No diamonds can be received on board at any port in the Brazils without a "despacho" or clearance from the "Consulado" or Export Board.

All cargo abroad to be sent alongside at the shipper's risk and expense.

Five per cent. primage to be paid on all homeward freight, except for specie, jewellery, plate, platina, precious stones, vanilla, and parcels.

Small parcels of succades, arrowroot, &c. charged at the rate for parcels and packages.

No package of specie, platina, pearls, precious stones, or jewellery, to be conveyed at a less charge than five silver dollars.

Outward and homeward packages and parcels will be received at the London office; by Messrs. Dunlop and Schoales, Southampton; and by the agents abroad, at the following rates, to be prepaid. One cubic foot and under, 7*s.* 6*d.* per package; above one foot and not exceeding two, 11*s.* 6*d.* ditto; above two feet and not exceeding three, 15*s.* ditto; above three cubic feet, 5*s.* per foot, up to 12 feet; any excess beyond that to be charged at the same rates as measurement cargo. Quarterly publications and pamphlets, 2*s.* each; monthly publications, 1*s.* each.

Intermediate Freight (Goods), when Conveyance is authorized, payable at the Port of Shipment or Delivery.

(No bill of lading for merchandize will be given for less freight than two and a half silver dollars.)

3*l.* 10*s.* per ton measurement of 40 cubic feet, without primage; cochineal, indigo, and other dry drugs, 1*d.* per lb. without primage; coffee, 3*l.* 10*s.* per ton weight.

Specie, jewellery, pearls, diamonds, and other precious stones: exceeding 2,500 miles, 1 per cent.; exceeding 1,000 miles, and not above 2,500 miles, ¾ per cent.; not exceeding 1,000 miles, ½ per cent.

Paper money and precious stones, from one Brazilian port to another, ½ per cent.

Plate: not exceeding 1,500 miles, 1 ½ per cent.; over 1,500 miles, 2 per cent.

No package of specie, &c., to be taken at a less freight than five silver dollars.

Cochineal from Teneriffe, deliverable in London, at a through charge of 1*d.* per lb. The bills of lading to contain a clause that such cochineal will be landed at Southampton, and forwarded thence to London at the Company's expense, but at the shipper's risk.

Packages and parcels to be prepaid at the port of shipment, to be charged one-fifth less than the Transatlantic Scale.

The

The intermediate rates of freight are applicable to goods landed or shipped at Lisbon, Madeira, and Teneriffe.

N. B.—No article of any kind to be received on board without going through the established customs' regulations and formalities.

Preference always to be given to transatlantic over intermediate cargo.

Goods and packages arriving from places abroad will be lodged in the Custom House, Southampton; whence they will have to be retired by the parties to whom they may be addressed; or Messrs. Dunlop & Schoales, shipping agents, will clear and forward them, if commissioned to do so by the consignees, at their expense.

Oil, sugar, molasses, cotton, and spirits, not to be shipped; nor gunpowder, vitriol, or any other article of an inflammable description

By Order of the Court of Directors.

London, 55, Moorgate-street, 5 May 1851. } *Edward Chappell*, Secretary.

REPORT of the Directors of the Royal Mail Steam Packet Company to the Proprietors, submitted to the General Meeting, at the London Tavern, the 10th day of April 1851.

THE Accounts for the year 1850, regularly audited, have as usual been transmitted to every shareholder of the Company, and it must be evident that the expectations heretofore held out by the Court of Directors have been satisfactorily realized.

In consequence of the alteration of routes, which took place on the 2d of August last, two extra ships were necessarily brought to England, and the working account therefore includes the expenses and receipts of two voyages more than the usual annual number. This increases the general expenses of the year 1850, particularly as relates to the charge for coals, which was augmented also by the greater consumption required to effect a higher rate of speed in steaming, resulting from the negociation in that respect between Her Majesty's Government and the Company; and by the loss from waste, when the account of stock was made up at the several depôts on the termination of the last contract.

As compared with the preceding year, it appears there was a large increase upon freight and passage money, affording satisfactory evidence of the estimation in which the public holds the accommodation afforded by the Company.

The

App. No. 10.

The proprietors were informed in October last, that the Directors had contracted for five new ships of the largest class, which are now rapidly progressing, as follows:—

Ships' Names.	Where Building.		Tons.	Horse Power.	Ship Builders.	Engine Makers.
	Hull.	Engines.				
Amazon -	Blackwall -	Limehouse	2,256	800	R. & H. Green -	Seaward & Capel.
Demerara -	Bristol -	Greenock	2,318	800	William Patterson	Caird & Co.
Magdalena	Northfleet -	Glasgow -	2,250	800	William Pitcher	Robert Napier.
Orinoco -	Northfleet -	Lambeth	2,245	800	William Pitcher	Maudslay, Sons, & Field
Parana -	Southampton	Greenock	2,252	800	M. Wigram & Sons	Caird & Co.

It is confidently expected that some of these ships will be launched in June next, and it is hoped the whole of them before the end of July; but some months longer will of course be occupied in putting on board their machinery, and getting them ready for sea.

It affords the Directors much satisfaction to repeat the assurance given at the last general meeting, that they will be able to effect this powerful addition to the number of the Company's ships, by availing themselves of last year's profit and the reserved fund, without its being necessary to make any call upon the proprietors.

It is a matter of considerable regret that irregularities occasioned by unusual storms, and the complicated nature of the branch routes (which is almost peculiar to this Company), should have occurred during the last winter in the arrivals and departures of the packets abroad, particularly in Guiana and Mexico, being the termini of their respective routes. That the Company's ships were not singular in this respect, is proved from the voyages of other steamers crossing the Atlantic at the same period, many of which experienced detentions more than commensurate with the difference of distances traversed. When however the new ships now constructing shall undertake the line between Southampton, St. Thomas, and Chagres, and other improvements, which are under consideration, shall be introduced, it is confidently believed that there will be no longer any reasonable cause of complaint.

The Brazil line of steam packets commenced running in January last, and the first ship (the "Teviot") having arrived at the different ports, both outward and homeward, at the times appointed, was received with great and general satisfaction throughout. Two other ships, the "Tay" and the "Medway," have since taken their departure, and up to the last advices have been equally successful. It would be premature to hazard any conjecture at so early a period, as to what may prove the eventual advantages to be derived from this portion of the service, but it is sufficient to state that the prospects so far are of an encouraging character.

The

The Directors take this opportunity of expressing their cordial appreciation of the liberality shown towards them by the foreign governments at whose ports the "Teviot" touched on her recent voyage, and for the concessions they have granted in favour of the undertaking. Thanks are especially due also to the British representatives in Spain, Portugal, Brazil, and the River Plate, for the exertions they have used on the recommendation of Viscount Palmerston, and for their zealous co-operation in promoting the enterprize by every means in their power.

Since the last general meeting in October, the Panamà Railroad has been commenced with great spirit, and it is even estimated that it may be opened in August or September next, from Limon Bay to Gorgona, from whence there is a mule road to Panamà. This portion of the work being accomplished, the difficult navigation of the Chagres River would be avoided, and the communication between the Atlantic and Pacific be greatly shortened and facilitated. It is evident that in the present state of the traffic between the two oceans, the line by the Isthmus of Panamà is one which must command the support of this Company, as from its central position it affords the most ready means of transit, not only with the northern and southern ports of the Pacific, including Chili, Peru, California, Oregon, and the Sandwich Islands; but that it is also the safest, the shortest, and the most economical route between Great Britain, New Zealand, and Australia. For these reasons, and for the advantage likely to be derived by the Royal Mail Steam Packet Company, the Directors are naturally desirous to afford the Panamà Railway Company of New York every legitimate assistance; and it is proposed that it be left to the discretion of the Directors to aid this important undertaking (should they think fit) by a temporary loan or otherwise, upon what may be considered sufficient security.

With increasing means and such favourable prospects, it would have afforded the Directors sincere pleasure could they have felt justified in recommending a larger dividend than heretofore; but with nearly half a million expended in providing additional ships to preserve the Company in a proper attitude, with the possibility of having to meet farther demands of a similar description, and with the knowledge that there will be a certain increase of expenditure hereafter, to be covered by an unascertained augmentation in the receipts, it appears to the Directors a more prudent course upon this occasion, to recommend a dividend, for the last six months of the year 1850, at the rate of 2*l.* per share (free of income tax), payable on and from the 15th instant.

(By Order of the Court of Directors),

E. Chappell, Secretary.

STATEMENT of Accounts of the Royal Mail Steam Packet Company, for the Year 1850.

Dr. — Working Account. — *Cr.*

DISBURSEMENTS.

	1849. £. s. d.	1850. £. s. d.
Coals, Freight, and all Charges	77,042 14 6	88,436 – 7
Wages	44,904 0 8	44,853 13 10
Provisions	61,445 6 4	63,868 9 7
Stores	13,808 9 4	15,387 8 –
Port Charges and Pilotage	6,672 8 3	6,745 – 1
General Service and Stations	14,422 2 6	13,179 10 5
Coal Sacks, &c.	476 12 10	1,927 9 2
Office and Law Expenses	1,774 13 5	1,713 1 8
Salaries	11,430 18 –	11,730 17 2
Insurance	25,000 – –	25,000 – –
Repairs of Ships and Machinery	41,958 16 11	41,055 8 10
	298,936 2 9	313,896 19 4
Surplus	129,320 2 9	143,362 18 7
£.	428,256 5 6	457,259 17 11

RECEIPTS.

	1849. £. s. d.		1850. £. s. d.	
Government Contract	– – –	240,000 – –	– – –	240,000 – –
Freight:				
Outward	12,785 3 1	– – –	19.965 10 8	
Intercolonial	4,908 14 11	72,290 14 2	3,842 3 5	84,607 1 11
Homeward	54,596 16 2	– – –	60,799 7 10	
Passage Money:				
Outward	48,300 7 9	– – –	57,420 10 3	
Intercolonial	33.908 2 1	115,965 11 4	33,258 16 4	132,652 16 –
Homeward	33,757 1 6	– – –	41,973 9 5	
	£.	428,256 5 6	£.	457,259 17 11

(continued)

Dr PROFIT AND LOSS ACCOUNT. *Cr*

	£.	s.	d.		£.	s.	d.
To Dividend, declared 11 April 1850	29,680	–	–	By Balance from 1849	57,583	2	6
To Income Tax for 1849	1,510	–	–				
To Balance transferred to the credit of General Reserve Fund	26,363	2	6				
£.	57,583	2	6				
To Amount written off value of London and Southampton Premises, Jamaica Wharf, and Pacific Treasure-houses	550	9	3	By Surplus of Working Account for 1850	143,362	18	7
To extraordinary outlay on *Thames*, viz.:				By Interest	7,683	4	10
Hull: £. 4,858 4 11				By Profit on Sale of 168,744 *l.* 9 *s.* 11 *d.*—3½ per cent. Stock	7,352	5	–
Engines: £. 7,639 18 4	12,498	3	3				
To Profit on the Year, viz.:							
Dividend declared 10th October: £. 29,680 – –							
Balance in favour of Company: £. 115,669 15 11	145,349	15	11				
£.	158,398	8	5	£.	158,398	8	5

Dr. **BALANCE SHEET, 31 December 1850.** *Cr.*

	£. s. d.	£. s. d.		£. s. d.	£. s. d.
To Cost and Outfit of Steam Ships, &c.:			By Capital Stock, 31st December 1849 -	889,125 - -	
31st December 1849 - - -	740,607 2 -		Arrears of Calls, received in 1850 -	1,275 - -	
Add Derwent - - £. 32,435 18 11					890,400 - -
,, Esk - - - 9,119 19 7			By Dividends unpaid - - - - -		2,176 11 1
	41,555 18 6				
		782,163 - 6	By Reserve Fund:		
To Advances on account of new Ships - - - -		112,747 3 11	Insurance Account - - -	76,374 5 6	
To Stock of Coals, Coal Sacks, &c. - - - - -		37,890 2 2	General Reserve Fund - -	149,282 19 4	
To Stock of Boilers, Engineers' and other Stores - -		24,828 11 3			225,657 4 10
To London and Southampton Premises, Jamaica Wharf, and Pacific Treasure Houses - - - - - - -		2,940 9 -	By Bills Payable and Outstanding Accounts - - -		34,826 19 11
To Investments, &c.:—			By Profit and Loss - - - - - - -		115,669 15 11
£. 79,891 17 6 Three per Cent Consols - -					
20,000 - - London and North Western Railway Debentures - -		190,000 - -			
95,000 - - at Interest, on call - - -					
To Ships' pending Voyages - - - - - -		25,047 7 8			
To Bills receivable and Cash Balances - - - -		33,113 17 3			
To Contract Money due this day - - - - -		60,000 - -			
	£.	1,268,730 11 9		£.	1,268,730 11 9

We have examined the foregoing Balance Sheet, and compared the items it comprises with the several books and vouchers relating thereto, and have found the same to be correct.

A. G. Robarts.
W. G. H. Whish.

E. Chappell, Secretary.

Appendix, No. 11.

ESTIMATED STATEMENT of the Amount of POSTAGE charged upon LETTERS and NEWSPAPERS conveyed between the *United Kingdom* and the *Australian* Colonies by the Sydney Packets, and by Private Ship, during the Year ended 5 October 1846.

		DESPATCHED.			RECEIVED.			TOTAL.		
		£.	s.	d.	£.	s.	d.	£.	s.	d.
By Packet -	Amount of Letters for one year, calculated on account of Letters despatched during the three months of September, October and November, 1846:	2,893	2	–	2,893	2	–	5,786	4	–
By Ship -	Actual amount of Postage on Letters during the year.	1,308	16	6	6,516	17	2	9,013	10	4
	Ditto Newspapers ditto -	213	6	5	974	10	3			
	TOTAL for a Year by Packet and by Private Ship - £.							14,799	14	4

General Post-office, April 1851. — *W. L. Maberly.* — *W. Bokenham.*

ESTIMATED STATEMENT of the Amount of POSTAGE charged upon LETTERS and NEWSPAPERS conveyed between the *United Kingdom* and the *Australian* Colonies by the Sydney Packets and by Private Ship, during the Year 1847.

		DESPATCHED.			RECEIVED.			TOTAL.		
		£.	s.	d.	£.	s.	d.	£.	s.	d.
By Packet -	Amount of Letters for one year, calculated on account of Letters despatched during the three months of September, October and November 1847.	2,289	2	8	4,474	6	–	6,763	8	8
By Ship -	Actual amount of Postage on Letters, during the year.	2,132	10	–	5,463	7	–	8,386	2	4
	Ditto Newspapers ditto -	268	–	4	522	5	–			
	TOTAL for a Year by Packet and by Private Ship - £.							15,149	11	–

General Post Office, April 1851. — *W. L. Maberly.* — *W. Bokenham.*

An Extract of the Number of Letters, and the Amount of Postage thereon, sent to and received from the following Places by Private Ship and by Packet, during the Six Months ended the 5th October 1848.

	BY PRIVATE SHIP.				BY PACKET.			
	SENT.		RECEIVED.		SENT.		RECEIVED.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
		£. s. d.		£. s. d.		£. s. d.		£. s. d.
Sydney - - -	3,065	133 19 2	12,973	694 18 –				
Port Phillip - - -	6,068	263 12 6	14,263	742 16 8				
Van Diemen's Land -	8,998	543 17 7	15,014	1,206 16 10				
South Australia - -	4,520	205 7 7	8,891	815 14 6	19,698	1,573 3 –	19,056	2,079 – –
Western Australia -	582	114 6 1	675	58 14 8				
New Zealand - -	1,078	62 16 9	2,231	132 6 8				
	24,311	1,323 19 8	54,047	3,651 7 4	19,698	1,573 3 –	19,056	2,079 – –

	SENT.		RECEIVED.	
	NUMBER.	AMOUNT.	NUMBER.	AMOUNT
		£. s. d.		£. s. d.
Total for Six Months by Private Ship and Packet - - -	44,009	2,897 2 8	73,007	5,730 7 4

General Post Office, April 1851.

W. L. Maberly. *W. Bokenham.*

AN ESTIMATE of the Number of LETTERS and the Amount of POSTAGE thereon sent to and received from *Mauritius* by Private Ship, during the Six Months ended the 5th October 1848.

SENT.		RECEIVED.	
Number.	Amount.	Number.	Amount.
	£. s. d.		£. s. d.
1,084	326 12 10	7,885	584 9 6

General Post-office, April 1851. *W. L. Maberly.* *W. Bokenham.*

Appendix, No. 12.

PAPER delivered in by *William Fane De Salis*, Esq., referred to in his Evidence, 10 April, Q. 183.

ANALYSIS of various COALS, which from their Localities may become available for the purposes of STEAM COMMUNICATION with *Australia*.

—	Carbon.	Hydrogen.	Ash.	Sulphur.	Nitrogen.	Oxygen.
New South Wales (Newcastle Coal Field).	82·39	5·32	2·04	1·70	1·23	8·32
Formosa (Coast of China)	78·26	5·70	3·96	0·49	0·64	10·9[illegible]
Colcurra Bay (Chili) -	78·43	5·59	5·60	1·06	1·09	[illegible]·33
Talcuhano Bay (Conception).	70·91	6·68	6·88	0·94	1·08	13·61
Labuan - - -	70·33	5·41	3·23	1·17	0·67	19·19
New Zealand, Massacre Bay.	- No analysis, but H. M. S. Driver reports favourably.					
Van Diemen's Land - Jerusalem Basin -	68·18	3·99	19·20	1·12	1·62	5·89
Vancouver's Island -	66·75	5·20	15·97	2·20	1·02	8·86
Port Famine (Patagonia)	64·37	5·38	6·23	1·03	0·50	2[illegible]·49
Sandy Bay - ditto -	62·19	5·08	13·29	1·13	0·63	1[illegible]·28
The following are the most approved varieties of English Steam Coal.						
Thomas's Merthyr -	90·12	4·33	1·68	0·85	1·00	2·0[illegible]
Duffryn - - -	88·26	4·66	3·[illegible]6	1·77	1·[illegible]	0·60
Lynvi - - - -	[illegible]	[illegible]·06	3·[illegible]	1·[illegible]	[illegible]	[illegible]
Haswell Wall End Steam-boat Coal.	8[illegible]·71	[illegible]·30	[illegible]	1·[illegible]	1·0[illegible]	[illegible]
Hartley - - -	82·24	5·4[illegible]	[illegible]	1·3[illegible]	1·61	6·44

Appendix, No. 13. - - - - -

TABLE No. II.—AN EXTRACT of the Log of the General Screw Steam Shipping to the *Cape of*

Month.	Day of Week.	Date.	Winds.	Courses.	Distance.	Latitude Observations.	Longitude Observations.
					Knots.	*Deg. Min.* North.	*Deg. Min.* West.
February -	Saturday -	15	S.S.E.	S.W. by W.	- -	- - -	- - -
	Sunday -	16	S.S.E.	S.W. by W. to S.W. ½ W.	212	- - -	- - -
	Monday -	17	Variable	S.W. ½ W. to S.S.W. -	197	45 24	10 52
	Tuesday -	18	S.S.W. to S.W.	S.S.W. to S.W.	201	41 54	11 9 15
	Wednesday -	19	E. to N.E.	S.W.	197	38 54	12 59
	Thursday -	20	N. to N.N.W.	S.W. to S.W. by S. -	218	35 30	15 17
	Friday -	21	S.W. to W.	S.W. by S.	214	32 4	16 24
	Saturday -	22	N.N.W. to N.W.	S.W. by S. to S.W. by W.	216	28 44	17 10
	Sunday -	23	N.W. to W.N.W.	S.W. by W. to S.W.	214	25 52	19 46
	Monday -	24	N.E.	S.W.	219	22 43	21 42
	Tuesday -	25	E.N.E.	S.W.	200	19 51	23 39½
	Wednesday -	26	N.E.	S.W. to S.S.E.	220	- - -	- - -
	Thursday -	27	N.E to E.N.E.	S.S.E. to S.S.E. ½ E.	204	14 7	22 59½
	Friday -	28	E.N.E and variable	S.S.E. to S.E.	203	11 42	20 26½
March -	Saturday -	1	Variable	S.E. to S.E. ½ E.	210	10 15	17 23
	Sunday -	2	N.E. to N.W.	S.E. to S.	213	9 11	13 58½
	Monday -	3	Variable	S.E. to S.	53	- - -	- - -
	Tuesday -	4	Variable	- - -	- -	- - -	- - -
	Wednesday -	5	Westerly	- - -	- -	- - -	- - -
	Thursday -	6	Variable	S.W. ¾ W.	32	8 12	- - -
	Friday -	7	S.S.W.	S.S.W. to S. S.E.	205	5 19	12 25
	Saturday -	8	S.W. to S.S.W	S.S.E.	202	2 59	9 52
	Sunday -	9	S. by E. to S.S.W.	S.S.E.	204	1 3 South.	7 46
	Monday -	10	S.W. by W. to S.	S.S.E.	194	0 46	5 32
	Tuesday -	11	S.S.W. to S.W.	S. by E.	226	2 14	2 39
	Wednesday -	12	S. to S.S.W.	S. by E.	199	4 38	0 34
	Thursday -	13	S. to S.S.E.	S. by E.	195	- - -	- - -
	Friday -	14	S.S.E. to S. ½ E.	S. by E. to S. ½ E.	200	9 44	East. 3 25
	Saturday -	15	S.	S. ½ E.	198	12 24	4 45
	Sunday -	16	S. to S. by E.	S. ½ E.	186	14 53 East.	6 21
	Monday -	17	S. by E. to S. by W.	S. ½ E.	179	17 16 South.	7 48
	Tuesday -	18	S. by E. to S.	E.S.E. to S.W.	156	19 16	8 3
	Wednesday -	19	S.	S.W. by W. to S.W. ½ S.	191	21 33	6 30
	Thursday -	20	S.	S.W. to W.S.W.	167	23 51	4 38
	Friday -	21	S. by W. to S.	S.E. ½ E. to S.S.E.	188	25 57	6 28
	Saturday -	22	S. by E. to S.	S.S.E. to S.E.	166	27 5	8 59½
	Sunday -	23	S. to S. by W.	S.E. to W.S.W.	231	27 10	12 20
	Monday -	24	S. by W. to S.S.E	S.W. by W.	186	28 49	10 26½
	Tuesday -	25	S.S.E. to S.E. by S	S.W. by W.	189	31 23	7 44
	Wednesday -	26	S. to S.S.W.	S.W. by W. to S.S.E.	178	33 52	7 29
	Thursday -	27	S.S.W. and variable	S.E. to S.E. by E.	196	34 27	11 11
	Friday -	28	N.W. to S.S.W.	S.E. by E.	195	34 11	15 7½
	Saturday -	29	S.S.W.	S.E. to N.E.	186	- - -	- - -
					7,640	- - -	- - -

Appendix, No. 13.

Company's Steam Ship "HELLESPONT," on her *Outward* Voyage from *Plymouth* to *Good Hope*, 1851.

Time Underweigh.		OUTWARD REMARKS.
Hrs.	*Min.*	
-	-	Left Plymouth, and made all sail.
24	0	8 A. M. feathered the screw; noon, light breezes; started the engines.
24	0	Noon, Cape Finisterre, bore S. 25° 18′ E. 151 miles; 1 P. M. feathered the screw; 3 P. M. started the engines.
24	0	11 P. M. feathered the screw; fresh breezes and fine weather.
24	0	Noon, wind falling light; started the engines.
24	0	A. M. light airs in all studding sails; 3 A. M. made all sail; noon, Bugio Island, bore N. ½ E. distance about 13 miles.
24	0	2 P. M. exchanged colours with the brig "Dart."
24	0	Noon, Island Palma W. ½ N., and south end of Teneriffe, S. S. E. ½ E. 7. 30 abreast of the Island Jeno.
24	0	Noon, St. Vincent S. 25 7′ W. 615 miles; fresh breezes and fine weather.
24	0	0. 30 P. M. feathered the screw; all studding sails set.
24	0	Noon, moderate and fine; 3. 30 P. M. started the engines; St. Vincent, S. 25° 18′ W. 205 miles.
22	30	10. 30 A. M. anchored 1 mile off the town of St. Vincent. The homeward-bound Brazil Mail "Teviot," laying at anchor 1. 30, weighed and proceeded out of the Bay; 4. 30 feathered the screw.
24	0	9. 15 P. M. started the engines; 8 A. M. feathered the screw; 4 A. M. S. W. end St. Jago, S. E. distance 12 miles.
24	0	11. 30 P. M. started the engines; noon, Cape Sierra Leone, S. 64° 41′ E. 450 miles.
24	0	6 P. M. sounded in 25 fathoms; fine sand.
24	0	Noon, Cape Sierra Leone, S. 46° E. 57 miles; 6 P. M. abreast of Sierra Leone.
7	0	7 P. M. came to an anchor in 8 fathoms; 7. 30 P. M. landed the mail and passengers; 8. 30 moored ship nearer the town.
-	-	Landed a box, said to contain specie. Employed in taking in coals; shifted ship off King Tom's Point.
-	-	Noon, hot and sultry; 5 P. M. got the anchor and chain on board; labourers employed in taking in
5	30	coals; 1 P. M. got steam up, weighed, and went alongside brig "Hickby;" 1 A. M. cast off from the brig, and anchored in 10 fathoms; 6. 30 weighed, and proceeded down the harbour at half speed.
24	0	6. 50 Cape Sierra Leone, bore East 6 miles.
24	0	A. M. moderate breezes and fine weather; noon, ditto winds and weather.
24	0	11 A. M. performed divine service. Fresh breezes, with thunder and lightning; noon, sent down top-gallant yards.
24	0	Noon, light breezes and fine weather.
24	0	10 A. M. in all sail; noon, light breezes and fine weather.
24	0	P. M. hands employed in shifting sails.
24	0	Noon, light breezes with rain; 1 P. M. strong breezes, attended with heavy rain.
24	0	Noon, fresh breezes and fine weather.
24	0	Hands employed in sending down lower yards and topmast yards.
24	0	Noon, fresh breezes, with a heavy head-swell; made all sail.
24	0	10 A. M. feathered the screw, making all fore and aft sail; noon, strong breezes and cloudy weather.
24	0	Filled the tanks with salt water.
24	0	Noon, fresh breezes and squally; all fore and aft sails set.
24	0	10 A. M. started the engines; crossed the fore and foretop-sail yards.
24	0	Noon, Cape Voltas, S. 27° E. 555 miles; fresh breezes, with a heavy head-sea; midnight, squally.
24	0	Noon, strong breezes and fine; feathered the screw.
24	0	Fresh winds and squally; hands employed painting; noon, moderate and fine weather.
24	0	4. 15 started the engines.
24	0	Noon, light breezes and airs; fine weather.
24	0	Noon, light airs and fine weather.
24	0	Noon, moderate, and fine weather.
24	0	1. 30 feathered the screw; 8 P. M. started the engines.
19	45	7. 45 A. M. came to anchor in Table Bay.
918	45	- - Average speed, 8. 32 knots per hour.

TABLE No. II.—AN EXTRACT of the Log of the General Screw Steam Shipping *Cape of Good Hope*

Month.	Day of Week.	Date.	Winds.	Courses.	Distance.	Latitude Observations.	Longitude Observations.
				°	*Knots.*	*Deg. Min.*	*Deg. Min.*
April	Friday	4	S.S.W.				
						South.	East.
	Saturday	5	S.S.W.	N. 48 W.	245	31 18	14 53
	Sunday	6	S. by E.	N. 40 W.	214	28 33	12 6
	Monday	7	Variable	N. 39 W.	215	25 50	9 28
	Tuesday	8	S.	N. 39 W.	215	23 3	7 0
	Wednesday	9	S.S.E.	N. 36 W.	225	20 11	4 50
	Thursday	10	S.S.E.	N. 37 W.	231	17 31	2 18
							West.
	Friday	11	S.S.E.	N. 37 W.	216	14 45	0 12
	Saturday	12	Variable	N. 37 W.	208	12 2	
	Sunday	13	S.S.E.	N. 31 W.	218	9 15	4 40
	Monday	14	S.S.E.	N. 31 W.	217	6 15	6 55
	Tuesday	15	S.S.E.	N. 20 W.	221	2 54	8 35
						North.	
	Wednesday	16	S.S.W.	N. 21 W.	218	0 34	10 12
	Thursday	17	Southerly	N. 20 W.	220		
	Friday	18	Variable	N. 33 W.	195	7 2	13 11
	Saturday	19	N.N.W.		130		
	Sunday	20	N.W.				
	Monday	21	N.W.	N. 65 W.	120	9 9	15 33
	Tuesday	22	Calm	N. 56 W.	182	10 32	18 9
	Wednesday	23	N.N.W.	N. 56 W.	186	11 59	20 52
	Thursday	24	N.E.	N. 45 W.	204	14 18	23 20
	Friday	25	N.E.		204		
	Saturday	26	N.E.	N. 12 W.	136	19 16	26 5
	Sunday	27	N.N.E.	N. 9. 30 W.	211	22 21	27 5
	Monday	28	N.E.	N. 10 W.	213	25 37	27 50
	Tuesday	29	Easterly	N. 4 E.	215	29 2	27 55
	Wednesday	30	N.	N. 42 E.	200	31 42	25 45
May	Thursday	1	N.E.	N. 48 E.	201	33 57	23 17
	Friday	2	E.N.E.	N. 48 E.	194	36 3	20 45
	Saturday	3	N.E.	N. 48 E.	192	38 21	17 59
	Sunday	4	N.N.W.	N. 46 E.	238	41 12	14 30
	Monday	5	N. to E.	N. 54 E.	207	43 8	11 16
	Tuesday	6	N.E.		161		
	Wednesday	7	N.	N.	83	44 26	8 40
	Thursday	8	N.W. to S.W.	N. 28 E.	241	48	6 53
	Friday	9	Variable		148		
					6,724		

Company's Steam Ship "HELLESPONT," on her *Homeward* Voyage from to *Plymouth*, 1851.

Time Underweigh.		HOMEWARD REMARKS.
Hrs.	*Min.*	
-	-	0. 1 P. M. weighed and proceeded; 2 P. M. Lion's Rump, S. by W. ½ W.; 15 M. hence dep.
23	55	
24	0	Light breeze and fine.
24	0	Light airs and fine.
24	0	Light breeze and fine.
24	0	8 A. M. feathered the screw.
24	0	7 P. M. started the engines.
24	0	Light breezes and fine.
24	0	Light weather.
24	0	Moderate and fine.
24	0	Moderate weather.
24	0	Fresh breeze and cloudy.
24	0	Light breeze and cloudy.
24	0	Heavy squalls, with thunder and lightning.
24	0	Fresh breeze and fine.
19	20	7. 20 arrived at Sierra Leone.
-	-	6. 15 weighed anchor; 8 P. M. the light bore S. E. ¾ E. 10 miles.
17	45	Moderate and fine.
24	0	Moderate weather.
24	0	Light breezes and fine.
24	0	Fresh breeze and fine.
23	50	11. 50 anchored at St. Vincent; 2. 30 weighed anchor; 8 S. E., W. of St. Antonio; W. S. W. 18 miles.
21	30	Moderate and fine.
24	0	Fresh breeze and fine.
24	0	Fresh weather.
24	0	Light breeze and fine.
24	0	Light weather.
24	0	Fresh breeze and fine.
24	0	Light breeze and fine.
24	0	Moderate winds and cloudy.
24	0	Squally weather.
24	0	Strong breeze and cloudy.
20	30	10. 30 anchored in Corunna Harbour.
11	0	1 A. M. got under weigh; 10 A. M. Cape Ortegal, S. ½ W., 28 miles.
24	0	Strong winds and cloudy
18	14	5 40 P. M. arrived at Plymouth
760	4	Average speed, 8. 62 knots per hour.

Average speed:

Outwards - - - - - - -	8	32	Knots.
Homewards - - - - - - -	8	62	„
	2) 16	94	„
Mean speed - - -	8	47	„ per hour.

Appendix, No. 14. - - - - - -

ROUTES AND TIMES OF - - - - -

General Line, Falmouth to - - -

Time of Starting.	STARTING PORT OR PLACE.	Distance, Geographical Miles.	Knots per Hour.
June 2, Noon.	Falmouth to Lisbon - - - - -	730	9
	Lisbon to Madeira - - - - -	450	9 ½
	Madeira to Santa Cruz, Teneriffe - -	250	9 ½
	Santa Cruz to Porto Praya, Cape Verdes -	910	10
	Cape Verdes to Ascension - - - -	1,530	10
	Ascension to St. Helena - - - -	655	9
	St. Helena to Cape of Good Hope - -	1,720	9
	Cape of Good Hope to Mauritius, by Algoa Bay, &c.	2,280	9 ½
	Mauritius to Swan River - - - -	3,150	9 ½
	Swan River to Torbay and Hamilton - -	325	9 ¼
	Torbay and Hamilton to Adelaide - -	1,050	9 ¼
	Adelaide to Port Phillip, Melbourne - -	490	9 ¼
	Melbourne to Hobart Town - - -	485	9 ¼
	Hobart Town to Sydney - - - -	630	9 ¼
	TOTALS - - -	14,655	- -
	Stop at Sydney - - - - - -	- -	- -
Aug. 14, at 2 P.M.	Sydney to Hobart Town - - - -	630	9 ¼
	Hobart Town to Melbourne - - -	485	9 ¼
	Melbourne to Adelaide - - - -	490	9 ¼
	Adelaide to Torbay and Hamilton - -	1,050	9 ¼
	Hamilton to Swan River - - - -	325	9 ¼
	Swan River to Mauritius - - - -	3,150	9 ½
	Mauritius by Bourbon, &c., to Cape of Good Hope.	2,280	9 ½
	Cape of Good Hope to St. Helena - -	1,720	9 ½
	St. Helena to Ascension - - - -	655	9 ½
	Ascension to Cape Verdes - - - -	1,530	10
	Cape Verdes to Santa Cruz, Teneriffe - -	910	10
	Teneriffe to Madeira - - - - -	250	9 ½
	Madeira to Lisbon - - - - -	450	9 ½
	Lisbon to Falmouth - - - - -	730	9
	TOTALS - - -	14,655	- -
	GRAND TOTALS - - -	29,310	- -

Appendix, No. 14.

STEAMERS.—12 STEAMERS.

Sydney, New South Wales. No. 1.

Hours on Voyage.	Stoppages, Hours.	Coal Depôt.	Arrive at, Date.	Time from England.		Time to Reply.	
				Days.	*Hours.*	*Days.*	*Hours.*
81	18	- - -	June 5, 9 P.M.	3	9	15	19
47 ½	5	- - -	„ 8, 3 P.M.	6	3	10	7
26 ½	5	- - -	„ 9, 10 P.M.	7	11	7	16
91	5	- - -	„ 13, 10 P.M.	11	10	One Month.	
153	5	Coals -	„ 20, noon	18	0	16	11
73	5	- - -	„ 23, 6 P.M.	21	6	10	3
191	10	Coals -	July 1, 10 P.M.	29	10	24	4
240	30	Coals -	„ 12, 8 A.M.	40	16	2	8
331	10	Coals -	„ 27, 9 A.M.	54	21	4	4
36	8	- - -	„ 29, 7 A.M	56	19	0	10
114	8	- - -	Aug. 3, 9 A.M.	61	2	21	6
54	8	Coals -	„ 5, 9 P.M.	64	9	16	4
53	10	- - -	„ 8, 8 A.M.	66	20	11	2
68	- -	Coals	„ 11, 2 P.M.	70	2		
1,559	127	- - -	- - -	70	2		
- -	120	Coals -	- - -	5	0	5	0
68	10	- - -	„ 19, 10 A.M.	2	20		
53	8	Coals -	„ 22, 1 A.M.	5	11		
54	8	- - -	„ 24, 3 P.M.	8	1		
114	8	- - -	„ 29, 5 P.M.	13	3		
36	8	Coals -	„ 31, 1 P.M.	14	23		
331	10	Coals -	Sept. 14, 4 P.M.	29	2		
240	30	- - -	„ 25, 2 A.M.	39	12		
181	5	- - -	Oct. 3, 9 P.M.	48	7		
69	5	Coals -	„ 6, 11 P.M.	51	9		
153	6	- - -	„ 13, 2 P.M.	58	0		
91	5	- - -	„ 17, 2 P.M.	62	0		
26 ½	5	- - -	„ 18, 10 P.M.	63	8		
47 ½	18	- - -	„ 21, 2 A.M.	65	12		
81	- -	- - -	„ 25, 5 A.M.	69	15		
1,545	126	- - -	- - -	69	15		
3,104	253	- - -	- - -	144	17		

AUSTRALIA AND - - - - -

Melbourne, Port Phillip - - - - -

Time of Starting.	STARTING PORT OR PLACE.	Distance, Geographical Miles.	Knots per Hour.
Aug. 6, 5 A.M.	Melbourne to Auckland, New Zealand -	1,510	9¼
	Stop at Auckland - - - - - -	- -	- -
	Auckland to Melbourne - - - -	1,510	9¼
	Totals - - -	3,020	- -

SOUTH AMERICAN - - - - -

Cape Verdes to - - - - - -

Time of Starting.	STARTING PORT OR PLACE.	Distance, Geographical Miles.	Knots per Hour.
June 14, noon	Cape Verdes to Pernambuco - - -	1,560	10½
	Pernambuco to Bahia - - - -	380	9½
	Bahia to Rio de Janeiro - - - -	780	9½
	Totals - - -	2,720	- -
	Stop at Rio de Janeiro - - - -	- -	- -
June 30, 7 P M.	Rio de Janeiro to Bahia - - - -	780	9½
	Bahia to Pernambuco - - - -	380	9½
	Pernambuco to Cape Verdes - - -	1,560	10½
	Totals - - -	2,720	- -
	GRAND TOTALS - - -	5,440	- -

- - - - - - NEW ZEALAND.—No. II.

- - - - - to Auckland, New Zealand.

Hours on Voyage.	Stoppages, Hours.	Coal Depôt.	Arrive at, Date.	Time from Melbourne.		Time to Reply.	
				Days.	*Hours.*	*Days.*	*Hours.*
164	- -	- - -	Aug. 13, 1 A.M.	6	20		
- -	48	Coals -	„ 15, 1 A.M.	2	0	2	0
164	- -	- - -	„ 21, 9 P.M.	6	20		
328	48	- - -	- - -	15	16		

- - - - - - DISTRICT.—No. III.

- - - - - - - - Rio de Janeiro.

Hours on Voyage.	Stoppages, Hours.	Coal Depôt.	Arrive at, Date.	Time from Cape Verdes.		Time to Reply.	
				Days.	*Hours.*	*Days.*	*Hours.*
149	10	- - -	June 20, 5 P.M.	6	5	15	14
41	10	- - -	„ 22, 8 P.M.	8	8	11	9
85	- -	- - -	„ 26, 7 P.M.	12	7		
275	20	- - -	- - -	12	7		
- -	96	Coals -	- - -	4	0	4	0
82	10	- - -	July 4, 5 A.M.	3	10		
40	12	- - -	„ 6, 7 A.M.	5	12		
149	- -	- - -	„ 12, 12 P.M.	12	5		
271	22	- - -	„ 12, midnt.	12	5		
546	138	- - -	- - -	28	12		

SOUTH AMERICAN - - - - - -

Rio de Janeiro to - - - - - - -

Time of Starting.	STARTING PORT OR PLACE.	Distance, Geographical Miles.	Knots per Hour.
June 27, 9 A.M.	Rio de Janeiro to Bar Rio Grande - -	740	9
	Bar Rio Grande to Monte Video, by Maldonado.	280	9
	Monte Video to Buenos Ayres - - -	110	9
	TOTALS - - -	1,130	- -
	Stop at Buenos Ayres - - - -	- -	- -
July 15, 5 P.M.	Buenos Ayres to Monte Video - - -	110	9
	Monte Video, &c. to Bar Rio Grande - -	280	9 ½
	Rio Grande to Rio de Janeiro - - -	740	9 ½
	TOTALS - - -	1,130	- -
	Stop at Rio de Janeiro - - - -	- -	- -
	GRAND TOTALS - - -	2,260	- -

SWAN RIVER AND - - - - - -

Swan River to Singapore - - - - - -

Time of Starting.	STARTING PORT OR PLACE.	Distance, Geographical Miles.	Knots per Hour.
Aug. 31, 6 P.M.	Swan River to Batavia - - - -	1,745	9 ½
	Batavia to Singapore - - - - -	480	9 ½
	Stop at Singapore - - - -	- -	- -
Sept. 14, 1 P.M.	Singapore to Batavia - - - -	480	9 ½
	Batavia to Swan River - - - -	1,745	9 ½
	Stop at Swan River - - - -	- -	- -
	TOTALS - - -	4,450	- -

N.B.—This station will require one steamer additional (13 in all), and will, by the the Oriental Company. The steamer on this station will start for Batavia and Singa- and be back at Swan River in time to coal, and be ready for the next homeward mail

- - - - - DISTRICT.—No. IV.

- - - - - - - Buenos Ayres.

Hours on Voyage.	Stoppages, Hours.	Coal Depôt.	Arrive at, Date.	Time from Rio de Janeiro.		Time to Reply.	
				Days.	*Hours.*	*Days.*	*Hours.*
82	24	- - -	June 30, 7 P.M.	3	10	18	4
31	16	- - -	July 3, 10 A.M.	5	16	14	22
12	- -	- - -	4 „ 6 A.M.	6	21	—	
125	40			6	21		
- -	275	Coals -	- - -	11	11	11	11
12	12	- - -	July 16, 5 A.M.	0	12	—	
30	32	- - -	„ 17, 11 P.M.	2	6	—	
80	- -	- - -	„ 22, 3 P.M.	6	22	—	
122	44			6	22		
- -	96	- - -	„ 26, 3 P.M.	4	0		
247	455			29	6		

- - - - - SINGAPORE STATION.—V.

- - - - - - - by Batavia.

Hours on Voyage.	Stoppages, Hours.	Coal Depôt.	Arrive at, Date.	Time from Swan River.		Time to Reply.
				Days.	*Hours.*	*Days.*
184	24	- - -	Sept. 8, 10 A.M.	7	16	—
1	- -	Coals -	„ 11, 1 P.M.	10	19	—
- -	72	- - -	„ 14, 1 P.M.	13	19	3
51	24	- - -	„ 16, 4 P.M.	15	22	7
184	- -	- - -	„ 25, 8 A.M.	24	14	—
- -	130	Coals -	„ 30, 6 P.M.	30	0	5
470	250					

service proposed, connect all Australia and New Zealand with China and India, through more upon the arrival of the homeward steamer from New Zealand, Sidney, &c. &c. from the eastward.

App. No. 14.

Course of Post.

Falmouth with			
Madeira - - - - -	17 days.		
Teneriffe - - - - -	23 days, or within 1 month.		
Cape Verde - - - -	Doubtful if within 1	„	
Pernambuco, Bahia, and Rio de Janeiro - - - - -	53 days, or within 2 months.		
Monte Video, Maldonado, and Buenos Ayres - - -	83	„	3 „
Ascension and St. Helena - -	53	„	2 „
Cape of Good Hope and Algoa Bay - - - - - -	84	„	3 „
I. Bourbon and Mauritius - -	84	„	3 „
Western Australia - - -	113	„	4 „
Southern Australia, Van Diemen's Land, and Sydney - -	145	„	5 „
Auckland, New Zealand - -	145	„	5 „

Remarks.

Time of steamers at sea, annually, 2,113 days.

				Geo. Miles.
Mileage run	1st	Station, or General Line - -		351,720
„	2d	„	New Zealand - -	36,240
„	3d	„	South American District	65,280
„	4th	„	„ - -	27,120
			Total - - -	480,360

Being for each steamer, 176 days, 1 hour, and 40,030 geographical miles yearly, exclusive of Station No. 5.

The steamers will be so stationed and distributed as to perform the work in given sections, and each will change its position so as to equalize the service and to come to England in regular rotation. There will be one steamer always ready at each end of the line, so that the one which arrives will not, except in cases of accidents, have to return with the first mail. The whole service, especially as to centrical points and coal depôts, will be worked under the British flag, and be, at the same time, in case of war, little exposed to attacks of enemies —objects, in both cases, of the greatest importance; and, moreover, will connect all these eastern colonies together in a regular and rapid communication.

Van Diemen's Land mails landed at Launceston would save about 420 miles distance, and give nearly four days longer stoppage at Sydney; thus save yearly 10,080 miles. Going direct from Adelaide to Hobart Town would save 200 miles, or 4,800 yearly, affording nearly two days additional stoppage at Sydney; the steamer for Auckland going from and returning to Adelaide. Going direct from Adelaide

Adelaide to Auckland would save 82 miles, 164 on each voyage, and thus afford Auckland so much longer time to reply; but then the steamer for Sydney could not go direct from Adelaide to Hobart Town.

London, 4 August 1846. *James Macqueen.*

COMPARATIVE DISTANCES.

	Geo. Miles.
Falmouth to Sydney, &c., by Company's Route	14,655

N.B.—This distance includes in post time Auckland, New Zealand.

Falmouth to Sydney.

Falmouth to Panama, by route West India steamers	5,710	
Panama to Sydney, by Auckland	8,210	
		13,920

This route excludes Van Diemen's land and all Southern and Western Australia.

Falmouth to Sydney, &c. by Red Sea.

Falmouth to Alexandria	2,900	
Alexandria to Aden	1,595	
Aden to Port de Galle	2,220	
Port de Galle to Swan River	3,100	
Swan River to Sydney, &c. &c.	2,980	
Sydney to Auckland	1,175	
		13,970

Falmouth to Sydney, &c. by Mauritius.

Falmouth to Aden	4,495	
Aden to Mauritius, including Bourbon	2,800	
Mauritius to Swan River	3,150	
Swan River to Sydney, &c. &c.	2,980	
Sydney to Auckland	1,175	
		14,600

Falmouth to Sydney, &c. by Torres Straits.

Falmouth to Port de Galle, by Aden, &c	6,715	
Port de Galle to Batavia	1,950	
Batavia to Sydney, by Torres Straits	4,250	
Sydney to Auckland	1,175	
		14,090

Appendix, No. 15. - - - - -

RETURN of the Number of LETTERS and NEWSPAPERS received from and dispatched to *Great Land, South Australia, New Zealand,* and *Western Australia,* during the Year 1847,

——	Great Britain.	India.	Manila.	Batavia.
NUMBER OF LETTERS. - - - - - -				
Sydney - - -	124,331	4,835	1,729	281
Port Phillip - -	21,942	44	88	1
TOTAL - - -	146,273	4,879	1,817	282
ESTIMATED AMOUNT - - - - - -				
——	One Shilling in England, Threepence in the Colony.	Fourpence in India, Threepence in the Colony.	Fourpence in Manila, Threepence in the Colony.	Fourpence in Batavia, Threepence in the Colony.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
	9,142 1 3	142 6 1	52 19 11	8 4 6
One-tenth added for double letters.	914 4 1	14 4 7	5 5 11	- 16 5
TOTAL - -	10,056 5 4	156 10 8	58 5 10	9 - 11
NUMBER OF - - - - - - -				
Sydney - - -	256,193	3,355	612	43
Port Phillip - -	16,845	16	- - -	- - -
TOTAL - - -	273,038	3,371	612	43

	£.	s.	d.
Estimated amount of postage charged in England on letters and newspapers conveyed between the United Kingdom and the Australian Colonies - - - - - - - - - -	14,709	14	4
Estimated amount charged in the Australian Colonies (one-fourth) or 3 *d.* a letter, with 10 per cent. added for double letters - -	3,699	18	6
Estimated amount charged in India on letters to and from the Australian Colonies, 4 *d.* a letter, with 10 per cent. for double letters - - - - - - - - - - - -	348	1	6
Estimated amount charged in the Australian Colonies, 3 *d.* a letter, with 10 per cent. for double letters - - - - - - -	261	1	1
Amount voted by the Legislative Council of New South Wales, in aid of steam communication - - - - - - - - -	6,000	-	-
£.	25,108	15	5

Appendix, No. 15.

Britain, India, Manila, and *China,* and the *estimated Number from and to *Van Diemen's* with the estimated Amount of Postage thereon.—Delivered in by *W. F. De Salis,* Esq.

China.	Van Diemen's Land.	South Australia.	New Zealand.	Western Australia.	TOTAL.
		NUMBER OF LETTERS.			
2,514	3,000	6,000	8,000	200	150,890
1	- - -	- - -	- - -	- -	22,076
2,515	3,000	6,000	8,000	200	172,966
		OF POSTAGE.			
Fourpence in China, Threepence in the Colony.	One Shilling in England, Fourpence in the Colony.	One Shilling in England, Sixpence in the Colony.	One Shilling in England, Fourpence in the Colony.	One Shilling in England, Fourpence in the Colony.	
£. s. d.	£ s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
73 7 1	200 - -	450 - -	533 6 8	13 6 8	10,615 12 2
7 6 8	20 - -	45 - -	53 6 8	1 6 8	1,061 11 -
80 13 9	220 - -	495 - -	586 13 4	14 13 4	11,677 3 2
		NEWSPAPERS.			
2,122	6,000	12,000	6,000	- -	286,325
- - -	- - -	- - -	- - -	- -	16,861
2,122	6,000	12,000	6,000	- -	303,186

* This only includes the Letters which pass through this office for Van Diemen's Land, New Zealand, Southern and Western Australia, and the letters received from those places for Great Britain, but as they are made up in mails, the numbers are only estimated.

Appendix, No. 16.

App. No. 16. **STATEMENT relative to Five Voyages to America.**

Clyde Foundry, Glasgow,
5 May 1851.

Dear Sir,

We have your favour of this day, and below send you a statement of five voyages to America; we have not got the particulars of the last voyage (sixth).

We are, &c.
(signed) *Tod & M'Gregor,*
p. *R. F. Pearce.*

J. W. M'Gregor, Esq.

		Days.	Hours.	
	OUT.			
1st	Trip to New York	17	–	detained with ice.
2d	„ „	14	6	
3d	„ „	15	8	
4th	„ „	14	10	
	HOME.			
1st	Trip from New York	14	6	
2d	„ „	14	14	
3d	„ „	15	–	
4th	„ „	14	8	

First trip from Liverpool to Philadelphia, 21 days 6 hours. This trip the mail boats took 18 days to New York.

First trip from Philadelphia, 13 days 15 hours.

Appendix, No. 17.

LOG of Her Majesty's Steam Sloop "*Rattler*," from 28 March to 13 April 1845.

Her Majesty's Steam Sloop "*Rattler*," Friday, 28 March.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			Running down the river towards Sheerness.	W. by S.	5	c. q.			A.M.—4. Lit the fires; draught of water, 11 ft. 9 in. fore, 12 ft. 11 in. aft.—5.30. Steam up: cast off from the hulk, and proceeded down the river.—6.30. Passed Greenhithe; turned, and steamed up the river to measure speed by mile-mark.—7.20. Turned, and steamed down the river, in company with Her Majesty's steam vessels "Alecto" and "Lightning."—8. Set square fore-sail and fore top-sail.—10. Passed the Nore Light vessel; furled sails.—10.40. Anchored at the Little Nore in 7 fathoms; veered to 30 fathoms cable; Garrison Point S.W. by W.; New Church S.; "Alecto" and "Lightning" in company.—Noon.
2									
3									
4									
5									
6									
7									
8									
9									
10									
11				W. by N.	6	„			
12									

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
–	–	–	—	–	–	–	–	At single anchor, Little Nore.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			At single anchor at the Little Nore.	W. by N.	7	b. c. q.			P. M.—1.40. Up gig.—3.30. Veered to 60 fathoms cable; received on board 46 lbs. of powder.—4.30. Sailed Her Majesty's steam vessel "Lightning"; found the screw propeller to be fouled by a hawser being around the shaft; employed getting up purchases to unship it; issued fishing gear to ship's company.
2									
3									
4									
5									
6					6	b. c.			
7									
8									
9									
10									
11									
12				W.N.W.	5	b.			

Her Majesty's Steam Sloop "*Rattler*," Saturday, 29 March 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			At anchor at the Little Nore.	N.W.byW.	5	b. c. m.			Crew employed unshipping screw-propeller; carried away spanker-gaff, by heaving on the purchase to lift the screw; shifted purchase to mizenmast head.—11. Shortened in to 25 fathoms cable.—Noon.
2									
3									
4				"	"	"			
5									
6									
7									
8				"	"	"			
9									
10									
11									
12				"	"	"			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
—	—	—	—	—	—	—	—	—

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			At anchor at the Little Nore.	N.W.	4	b. c. m.			Employed unshipping screw-propeller.—3. Got out screw and found 24 fathoms of 9-inch hawser, and part of a fishing-net wound round the shaft; employed clearing it.—5. Shipped screw-propeller.—6. Veered to 60 fathoms cable.—Midnight.
2									
3									
4				"	"	"			
5									
6									
7									
8				"	"	"			
9									
10					2	"			
11					1	"			
12				"	"	"			

Her Majesty's Steam Sloop "*Rattler*," Sunday, 30 March 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1				Calm	0	b. c. o.			3.10. Brought fires forward. —5. Weighed and proceeded; "Alecto" in company, two cables' length on starboard bow.—5.19. Nore Light vessel N.N.W.—5.33, and by chron. 5.54. "Alecto" abeam.—6.4. Mouse Light vessel S.S.E.; running through King's Channel.—6.45. Passed the Sheers Lighthouse.—6.49. Passed Middle Light vessel.—7.41 by chron. Stopped engines.—7.44.30 chron. Proceeded.—8.30. Altered course to N.E. by N.—9. South Ship Head buoy E.S.E.—10. Ship Wash Light vessel S.E. by E.; mustered by division, and performed Divine Service.—Noon. "Alecto" S.W. by S., 1 ⅛ mile.
2									
3									
4									
5									
6			E. by N.						
7									
8			E. N. E		„	„			
9	8	4	„	E. by N.	1	b. c. m.			
10	8	6	N. E. by N.	E. S. E.	2	c. o.			
11	8	8		S. E.					
12	9	„	„	„	„	„			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
—	—	—	—	—	—	—	—	—

1	9	5	N. by E.	S. S. E.	3	c.		P.M.—1. Passed the East Barnard buoy.—1.30. Passed between Lowestoff and Stanford Light vessels.—At 2.33 30 chron. stopped engines; St. Nicholas Light vessel S. E. by E.—At 2.54.8. "Alecto" 60 yards distant.—3. Set square foresail, fore topsail, and top-gallant sail, and proceeded at full speed.—3.32.30. "Alecto" abeam.—3.40. Cockle Light vessel E.S.E.—3.51. Winterton Lighthouse W.S.W.—4. "Alecto" S. by W. about 1 mile.—5. "Alecto" astern about 1¼ mile.—5.20 Cromer Lighthouse W. S. W. about 4 miles.—6.21.0. chron. Stopped engines.—6.34.45 chron. Proceeded; "Alecto" abeam.—6. Shortened and furled all sails; down top-gallant yard.—7.15. Stopped; Cromer Light S.W. by S.—7.20. Proceeded.—7.30. Came to an anchor, with a small bower, in 10 fathoms; veered to 60 fathoms cable, Cromer Light S.S.W.; Hasborough Lights S. E. by S.
2	9	„						
3	4	Hove to.						
4	9	5	N. by W. ½ W.	S.W. by S.	„	„		
5	9	5	N. by W. ¾ W.		2	„		
6	9	„			3	„		
7	9	„	N.W. ½ W.	„	„	„		
8	„	„	At single anchor off Cromer.					
9	„	„						
10	„	„						
11	„	„						
12	„	„			7	c. q.		

Her Majesty's Steam Sloop "*Rattler*," Monday, 31 March 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			At single anchor off Cromer.	N.W.	7	c. o. q.			A.M.—5. Down fore and fore-topsail yards, and struck top-masts.—7. Shortened in cable, and parted small bower cable in heaving, two fathoms outside the hawse; lost anchors, bower, 1 in No.; bower cable 14 fathoms.—8. Went on slow, to close "Alecto."—8.33.10 chron. went on full speed; "Alecto" N. by E. ¾ E.; shaped course N. by W. ¼ W.—9.22.30 chron. "Alecto" abeam.—9.20 passed Sheringham buoy; heavy head-sea.—Noon, "Alecto" astern about a mile.
2									
3									
4				West.					
5									
6									
7					6	c. o.			
8			W. by W. ¼ W.	N.W.	„	c. b.			
9	2	5	N. by W. ¾ W.						
10	5	„							
11	5	„			5	b.			
12	6	„	N.N.W. ¼ W.	N.W. by N.	4	„			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
—	—	—	—	—	—	—	—	Dudgeon Light N. by W. 3 miles.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	7	6	N.W. ½ N.	N.N.W.	5	b. c. o.			P.M.—12.44. Passed the Dudgeon Light vessel; altered course to N.W. ½ N.; "Alecto" astern 2,043 yards.—2.30. Observed land on port bow.—3.15. Observed Spurn Light vessel on starboard bow.—4. "Alecto" S.E. ½ S. about five miles.—4.30. Spurn Light vessel E. by N. ¾ of a mile, running for the River Humber.—5.12. Passed the Bull Light vessel.—5.17.30 chron. stopped engines, and came to anchor in Hawke Roads, with B. B., 7 fathoms water; veered to 48 fathoms; Spurn Upper Light S. E. by E.; Bull Light vessel S. ½ W.—5.56.30 chron. "Alecto" stopped and anchored two cable lengths astern; got out spare bower anchor, and bent cable.—Midnight.
2	7	8							
3	8	„		North.	4				
4	8	6			3				
5	9	„							
6	Running for the Humber River.			N.E.	2				
7			At single anchor, Hawke Roads.		1	b. c.			
8									
9				Calm.	0				
10									
11									
12				S.S.W.	1	„			

Her Majesty's Steam Sloop "*Rattler*," Tuesday, 1 April 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1				S. S. W.	1	b. c.	Smooth.		A.M.—6. Lighted fires.—8.20. shortened in cable.—9. Weighed and steamed out of the river in company with "Alecto."—9.15. Passed the Bull Light vessel.—9.25. Passed "Alecto."—9.45. Passed the Spurn Light vessel, bearing N. W. ½ W.—11.35. Stopped engines, backed astern. 11.40. Stopped.—Noon. "Electo" abeam one cable's length.
2									
3					5	„			
4				South.		c.			
5						c. f.			
6						o. f.			
7			At anchor in Hawke Roads.						
8						c. m.			
9						o. c.			
10				S. S. E.					
11	9	5	N. by E. ½ E.	„	„	„			
			In 2′ 8″ with a fresh astern; stopped and got sternway.						
12	5	5	„	„	„	„			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
„	„	„	„	„	53.53 N.	„	0.4 E.	„

1	2	5	N. by W. ½ W.	S. by E.	3	c.			P.M.—2. Up masts and yards; ben. foretopsail.—2.24.10 chron. "Alecto" 60 yards distance. Time 3.15.—Made all plain sail before the wind.—3.30. Set port foretopmast studding-sail.—4. Flamborough Head N.W. by N. 10 miles.—4.42 chron. "Alecto" abeam; set lower studding-sail. 5. Flamborough Head W. by S. about 10 miles.—6. Furled head-sails; "Alecto" astern about ¾ mile.—6.30 chron. "Alecto" 2,503 yards distance.—6.50. Shortened sail to foretopsail.—8. "Alecto" astern ½ a mile.—9.40. Observed Whitby Light W. by S.—Midnight. "Alecto" in company.
2	2	5					Smooth.		
3	2	5							
4	5	„	„	„	„	„	„		
5	6	5	N. by W. ¼ W.	S. by E.	4	0			
6	6	6							
7	5	5				c.			
8	4	5	„	„	„	„	„		
9	5	„							
10	5	„							
11	4	6							
12	4	6	„	„	„	c. m.	„		

Her Majesty's Steam Sloop "*Rattler*," Wednesday, 2 April 1845.

H.	K.	F.	Courses.	Wind. D.	Wind. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	5	2	N. by W. ¼ W.	S. by E.	3	o. c.	Smooth.		A.M.—4. "Alecto" in company.—8. "Alecto in company.—9.15. Hauled to the wind on port tack, and made all sail; "Alecto" in company.—9.45 chron. "Alecto" S. by E. ¼.—11. "Alecto" S.E. by E.—Noon. Tynemouth Castle N.W. ½ N.; "Alecto" E. by N.; tacked "Alecto" in company.
2	5	2							
3	4	2							
4	4	,,	,,	,,	,,	b. c.			
5	3	,,							
6	2	5							
7	2	5				b. c. m.			
8	3	,,	,,	,,	,,	,,	,,		
9	3	,,		S.W. by W.	4				
10	1 2	,, 2	W. by S.	S.S.W.	3	c. m.			
11	5	5			4				
12	5	2	S.W.	S.S.E.	,,	,,	,,		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
N. 35° W.	80′	101′	Ebb and Flood.	N. 54° 58′	,,	,,	W. 1° 14′	Tynemouth Castle, N.W. ¼ N. 7 miles.

H.	K.	F.	Courses.	Wind. D.	Wind. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	5	3	E. ¼ S.	S.S.E.	3	c. m.	Smooth.		0.10. Tacked.—2.33 chron. "Alecto" N.W. two cables' lengths.—2.30. Altered course to E.N.E.—2 35. In fore top-gallant sail.—4. "Alecto" W.S.W. two miles; set fore top-gallantlant sail.—5.52 chron. Hove to.—6.32.20 chron. "Alecto" three cables' length astern; altered course to N.W. by N.; shortened sail to single-reefed fore-topsail.—8. "Alecto" in company.—Midnight. "Alecto" in company.
2	5	6							
3	2 6	,, ,,	E.N.E.	S.E.	5	b. c. f.			
4	8	,,	,,	,,	,,	,,	,,		
5	7	2				b. c. m.			
6	3 1	5 ,,	N.W.			b. c.			
7	3	5	N.W. by N.		3				
8	4	,,	,,	,,	,,	,,	,,		
9	4	,,		S.S.E.					
10	4	4							
11	4	5							
12	4	2	,,	,,	,,	,,	,,		

Her Majesty's Steam Sloop "*Rattler*," Thursday, 3 April 1845.

H.	K.	F.	Courses.	Wind. D.	Wind. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	4	„	N.W. by N.	S.S.E.	3	b.	Smooth.		1.10. Observed the Staples Light N.W. by W.—4. Staples Light S.W. by W. ½ W. about 10 miles; "Alecto" in company. —9. Furled sails.—9.40. Took "Alecto" in tow. — 10.10.8. Set patent log.—10.30. Observed the land.—11.10.8. Stopped engines and cast off from "Alecto;" patent log 7 1/20; trying experiments round the compass full speed; helm hard over; first circle, 5 min. 39 sec.; second circle, 5 min. 31 sec.; came round 16 points after the engines were stopped.—Noon. Stopped; "Alecto" in company.
2	3	5							
3	3	„							
4	2	6	„	S.S.W.	2	„	„		
5	2	5							
6	2	„							
7	2	4							
8	2	„	„	S.W.	1	b. m.	„		
9	2	„			2				
			From no way, described the circle in 5 min. 17 sec.						
10			Hove to						
11	7	„	West		1				
			From full speed astern, 7.5 knots, until her way was stopped, 1 min. 33 sec.						
12	„	„	„	calm	0	b. f.			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
N.48° W.	56′	94′	Ebb and Flood.	„	N. 55° 49′	„	W. 1° 53′	St. Abb's, N. 56° W. 12 miles.

H.	K.	F.	Courses.	Wind. D.	Wind. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	„	„	„	S.E.	2	b. f.	Smooth.		P.M.—1. Berwick Lighthouse 1 mile.—1.40. Thick fog; fired three signal guns for "Alecto." —3.40. "Alecto" in sight.—4. "Alecto" took ship in tow.—4.15 chron. Set patent log.—5.15 chron. "Alecto" stopped; patent log 5 17/20.—5.30. Lashed stern to stern of "Alecto," and proceed full speed against "Alecto."—5.45. Set patent log.—6. Stopped engines; patent log 2 8/10; cast off from "Alecto."—6.10. Proceeded slow—10. Altered course to E. by N.—Midnight. Stopped engines.
2	2	5	N.E. by E.						
3	1	5	N. ½ E.						
4			Head round the compass.						
5	6	„		N.E	2	f.	„		
6	1	3	S. by W.						
7	4	„	N.W. by N.						
	4	„	„	N.W.	„	„	„		
9	4	5	„	N. by W.	„	„	„		
10	5	2							
11	4	5	E. by N.	E.N.E.					
12	4	5	„	„	„	„	„		

Her Majesty's Steam Sloop "*Rattler*," Friday, 4 April 1845.

H.	K.	F.	Courses.	Wind. D.	Wind. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	–	–	– – –	N.E.	2	F.	Smooth		4. .—5. Proceeded full speed.—6.30. Observed the "Alecto" in company.—9.30. Anchored in Leith Roads in 4 ½ fathoms; veered to 20 fathoms cable.—10.30. Weighed and steamed alongside Granton Pier. Secured ship; draught of water, 10 ft. 9 in. fore, 12 ft. 3 in. aft.
2	Lying to; head, S.E.								
3									
4									
5	6	„	W.N.W.	„	„	„	„		
6	9	„		N.W. by N.					
7	9	5							
8	10	„	„	„	„	„	„		
9	Running up the								
10	Frith								
11	of Forth.								
12									

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance.
–	–	–	—	–	–	–	–	—

1								P. M.—Employed coaling and watering ship.—5.30. Low water; ship took the ground.—9. Ship afloat; cast off from the pier, and anchored in Leith Roads in 5 fathoms; veered to 45 fathoms cable; received coals, 55 tons; up boats.
2			E.N.E.	3	c. m.			
3								
4								
5								
6			„	„	„			
7								
8								
9								
10								
11								
12			„	„	„			

Her Majesty's Steam Sloop "*Rattler*," Leith Roads.

Date.	Winds. D.	Winds. F.	State of Weather.	Ther.	REMARKS, &c.
Saturday, 5th April 1845.	E.N.E.	3	c. m.		A.M.—Employed cleaning ship.
	Variable	"	"		Employed variously, as requisite.
	"	"	"		
	"	"	"		Noon; draught of water, 11 ft. 2 in. fore; 12 feet aft.
	"	"	"		
	"	"	c. m.		P.M.—Employed as necessary.
	"	"	b. c. m.		Sunset, up boats.
	"	"	"		Midnight.
Sunday, 6th.	Easterly	3	b. c. m.		A.M.—9.30. Mustered by divisions.
	"	"	"		
	"	"	"		10. Performed divine service.
	"	"	"		
	Variable	"	"		
			o. f.		Sunset, up boats.
	"	"	"		Midnight.

Her Majesty's Steam Sloop "*Rattler*," Monday, 7 April 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea	Lee way.	REMARKS, &c.
1			At single anchor, Leith Roads.	E. S. E.	3	c. m.			
2									
3									
4									
5				"	"	"			
6									A.M.—9.30. Mustered by divisions; loosed sails to dry.
7									
8									
9				"	"	"			
10									
11				Easterly					
12				"	"	"			Noon.

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance at Noon.
"	"	"	"	"	"	"	"	At Anchor.
1			Easterly	2	b. c.			P.M.—Unbent squaresails; down yards and topmasts.—3. Lit the fires.—4.30. Shortened in cable.—5.20. Weighed and proceeded.——5.30. Stopped draught of watter, 11 f. 1 in. forward, 12 f. 8 in. aft.—5.45. Proceeded down the Frith of Forth, "Alecto" in company.—6.15. Inch Keith Lighthouse S.S.W.—6.45. Stopped engines.—6.50. Proceeded.—7.10. Reduced to half speed.—8. "Alecto" in company.——9.5. Mary Island Light N. by E.—9.30. Mary Island Light N. by W.; altered course.—11.10. Altered course to S.S.E. Midnight, "Alecto" in company.
2								
3								
4				"	"	"		
5				N.E. by N.				
6					3	b. c. q.		
7	5	"	E. by S.					
8	6	5	"					
9	6	"		S.S.E.	2	b. m.		
10	3 / 3	" / "	S.E. by					
11	6	"						
12	1 / 5	" / "	S.S.E.	S.E.	"	"		

Her Majesty's Steam Sloop "*Rattler*," Tuesday, 8 April 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea	Lee way.	REMARKS, &c.
1	5	6	S.S.E.	S.E.	4	b. c.	Moderate.		A.M.—4. "Alecto" in company.—6.40. Proceeded full speed.—7.45. Eased engines.—8. "Alecto" in company.—8.34.45 chron.—"Alecto" abeam; proceeded full speed.—Noon, "Alecto" N.N.W. about 3½ miles.
2	6	,,							
3	5	6							
4	5	4	,,	,,	5	,,	,,		
5	5	6							
6	6	,,							
7	7	4							
8	7	6	,,	S.S.W.	,,	,,	,,		
9	8	4			4	c. m.			
10	8	4			,,	c. m. r.			
11	9	,,							
12	9	,,	,,	,,	,,	,,	,,		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance.
S. 54° E.	107′	103′	Tide, Ebb, and Flood.	Obscure.	5° 3′	,,	0° 6′ East.	Flamborough Head S. 5° W. 55′

1	9	,,	S.S.E.	S.S.W.	3	c. m.	Smooth.		P.M.—3. "Alecto" N.N.W. ¼ W.—4. "Alecto" astern about 8 miles.—4.10. Lost sight of "Alecto."—4. 31.30 chron. Stopped engines.—4.25. Observed "Alecto" bearing N.N.W.—5.22.15 chron. "Alecto" abeam; proceeded half speed.—5.30. Stopped engines.—7.10. Proceeded full speed to close a fishing boat.—7.50. Stopped; sent boat to her.—8. Boat returned; up ditto, and proceeded slow. Midnight; "Alecto" in company.
2	9	,,							
3	9	2				c.			
4	9	,,	,,	,,	2	b. c.	,,		
5	4 / 2	,, / 5							
6	Hove to								
7	Head S.S.W.			West					
8	4		,,						
9	5	6	E.S.E.	,,	3	,,	,,		
10	4	5							
11	4	,,							
12	4	4	,,	,,	,,	b.	,,		

Her Majesty's Steam Sloop "*Rattler*," Wednesday, 9 April 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Leeway.	REMARKS, &c.
1	4	4	E.S.E.	W. by N.	3	B.	Smooth.		A.M.—1.50. Stopped engines; sounded in 18 fathoms.—4. "Alecto" in company.—5.20. Lost overboard by accident one hand-lead and line.—7.40. Proceeded.—8. Came to an anchor with kedge in 16 fathoms on the Dogger Bank, veered to 50 fathoms hawser, "Alecto" in company.—9. Mustered by divisions and exercised a division at quarters.—Noon. At anchor.
2	3	"							
3									
4			Hove to,						
5			head to the	"	"	"	"		
6			northward.						
7									
8			At anchor with kedge on the Dogger Bank.	"	"	"	"		
9									
10				Calm	0.	b. c.			
11									
12				"	"	"	"		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance.
S. 60° E.	50′	48′	"	N. 54° 38′	N. 54° 49′	E. 1° 27′	E. 1° 24′	Flamborough Head Light, S. 60 W. 60.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Leeway.	REMARKS, &c.
1				Calm.	0.	b. c.	Smooth.		P.M.—Crew variously employed.—6.45. Veered to 90 fathoms hawser.—8. "Alecto" bearing E.S.E.—11. Observed "Alecto" burn a blue light; burnt a blue light as signal to "Alecto."—11.50. "Alecto" burnt a blue light; made a signal for "Alecto" to weigh; brought forward the fires and up steam.—Midnight.
2									
3									
4				E. N. E.	2	b. c.	"		
5									
6				N. E.	"	"	"		
7									
8			At anchor with kedge on the Dogger Bank.	"	"	"	"		
9							Moderate.		
10					4	c. q.			
11									
12				N. by E.		c. m.	"		

Her Majesty's Steam Sloop "*Rattler*," Thursday, 10 April 1845.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c
1	2	5	N.E. by N.	N.E.	5	o. m.	Rough.		A.M.—0.10. Weighed the kedge.—0.30. Proceeded slow. —4. "Alecto" in company.—6.4.20 chron. "Alecto" W.N.W. two cables' lengths; proceeded full speed, and altered course to N.E.—7.30. Set patent log.—8. "Alecto" bearing E. by S. three cables' length.—8.20. Engines stopped.—8.25. Proceeded full speed.—10.57. In patent log. —11.15. Set ditto; "Alecto" S.E. by E.; in second reef of foresail and mainsail, and first of mizen and fore staysail.—Noon. "Alecto" S.E. by E. a quarter of a mile.
2	3	5	N.E. by E.½E.						
3	3	„	N.E.						
4	2	5	„	„	„	„	„		
5	3	„			6	c. p.			
6	3	„					Heavy head sea.		
7	2	„				o. p.			
8	3	5	„						
9	4	2			7	g. m.			
10	4	2							
11	4	„							
12	4	„	„	N.E. by E.	„	„	„		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance.
N. 21° E.	38′	38′	Head sea.	Sun obscure.	N. 55° 13′	„	E. 1° 52′	Ower Bank, east extreme S. 2° W. 122 miles.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c
1	4	„	N.E.	N.E.	7	o. m.	Heavy head sea.		P.M.—1.5. chron. "Alecto" N.E. by E. one third of a mile; stood off on port tack, set double reefed mainsail, and close reefed gaff foresail, and single reefed fore staysail.—2.30. Lost sight of "Alecto;" out second and third reefs of gaff foresail. — 3.55. Tacked.—5.40. Heavy sea struck the ship and washed away two shutters of bulwark on forecastle, and lead-lines and lead one in number.—6.30. Observed "Alecto" N.E. ½ N., distant 3¼ miles; "Alecto" bore up, eased engines to half speed.—8. "Alecto" in company.—10.45. Lost sight of "Alecto" E.N.E.—Sliding t. Burnt a blue light; "Alecto" answered ditto, bearing S E. by E.
2	6	6	S.E.	E.N.E.					
3	9	„							
4	8	5	„	„	„	„	Heavy cross sea.		
5	8	6	N. ½ E.						
6	9	2	North.	E.N.E.					
7	7	„							
8	4	6	„	„	„	„	„		
9	4	2	N. by E.						
10	4	4							
11	4	4	N. ½ E						
12	4	2	„	„	„	„	„		

Her Majesty's Steam Sloop "*Rattler*," Friday, 11 April.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	4	2	North.	E.N.E.	6	o. p.	Cross Sea.		A.M.—5.30. Observed "Alecto," E. by S.; found the splice in the collar of fore-stay drawn.—7.45. Altered course to S.W. by W.; proceeded full speed.—8. "Alecto" in company, bearing N.E.; employed refitting fore-stay.—Noon. "Alecto" astern, 4¼ miles.
2	4	2			5				
3	4	1		N.E. by E.	4	g. m. p.	"		
4	4	"	"	"	"	"			
5	3	5	N. by E.						
6	3	"							
7	3	4	E. by S.						
8	3	6	S.W. by W.	E. by N.	"	"	"		
9	9	2			3	g. m. p.			
10	9	4			2				
11	9	2							
12	9	4		E.N.E.	"	"	"		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude N. Obs.	Latitude N. Acct.	Longitude E. Obs.	Longitude E. Acct.	Bearing and Distance.
N 31° W.	32'	141'	Ebb and Flood.	Obscure.	N. 55.11	"	E. 1.23.	Flamborough Head Light, S. 28° W. 105 miles.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	9	4	S.W. by W. ½ W.	North.	1	o. c.	Heavy swell.		P.M.—Set up forestay.—2.48. Stopped engines to tighten up the excentric.—2.56. Proceeded; "Alecto" astern about 7 miles.—5.45. Lost sight of "Alecto;" stopped.—6.15. Observed "Alecto" E. by N. about 5 miles.—7.10. Went on half speed.—7.45. Went on full speed.—8.20. "Alecto" N. by E.—8.40. Observed Flamborough Head light, S.W. by W.—9. Lost sight of "Alecto;" proceeded half speed.—10. "Alecto" in company.—11.30. Flamborough Head light, North; altered course to S.W.—Midnight, "Alecto" in company.
2	9	2							
3	8	8							
4	9	4	"	"	2	"	"		
5	9	4				c.			
6	7	"				c. q.			
7	5	2							
8	7	"	"	"	"	"	"		
9	9	2	S.W. ½ W.	N.E.	"	b. c.			
10	8	2	S.W. by W.			c. r.			
11	7	4	S.W. by S.			b. c.			
12	4 / 4	" / "	S. by W.			c.	"		

Her Majesty's Steam Sloop "*Rattler*," Saturday, 12 April.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	8	„	S. by W.	N.E.	2	c. p.	Heavy swell.		A.M.—2.35. "Alecto" burned a blue light; answered ditto with a blue light. Observed the Spurn Light.—3.10. Stopped engines, and hove-to off the Spurn Light-vessel.—4. Spurn Light-vessel W.N.W., "Alecto" in company.—5.10. Proceeded half speed.—5.15. Ditto full speed.—7.30. Passed the Dudgeon Light-vessel, N.E. by E.—8. "Alecto" bearing N. by W. ½ W., distant three miles.—9.40. Cromer Lighthouse S.W. by W. ½ W.—11.40. Passed Cockle Light-vessel S.E. by E. ½ E.—Noon. Set gaff fore and mainsails, jibs, and spanker. Running through Yarmouth Roads, "Alecto" astern 5 miles.
2	7	2							
3	6	„	S.S.W.	E.N.E.					
4	1	4	S.W. by W.						
	„	„	„	„	„	b. c.	„		
5	7	4	S.W. by S.						
6	9	„							
7	9	„	S.W. by S. ½ S.						
8	9	„	S. by E. ½ E.	„	„	„	„		
9	9	„	S. by E. ¾ E.	N.E.	„	o. g. p.			
10	9	2	S. by E. ½ E.	N.N.W.					
11	9	2							
12	3	„	South.						
	6	2	S.W.	„	3	c.	„		

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearing and Distance
„	„	„	„	„	„	„	„	Running through Yarmouth Roads.

H.	K.	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1	9	„	S. by E.	N.N.W.	2	c.	„		P. M.—1. Passed Stanford Light-vessel; showed numbers to H.M.S. "Mastiff," lying at anchor.—3.25. Passed Orfordness.—4.10. Stopped engines; shortened sail, and anchored in Hollesley Bay with B. B., in 4 ¾ fathoms; veered to 40 fathoms cable. Orford Upper Lighthouse E. by N. ½ N. Boyton Mill, North. Draught of water, 10 ft. 3 in. fore; 12 ft. 5 in. aft.—5.10 Arrived H. M. Steam-vessel "Alecto."
2	9	2	S.W. by S.						
3	9	4	S.W. ½ W.						
4			Running along shore towards Hollesley Bay.	„	4	o.	„		
5									
6				S.S.E.	1	„	„		
7									
8				„	„	„	„		
9			At single anchor Hollesley Bay.						
10									
11									
12				„	„	„	„		

Her Majesty's Steam Sloop "*Rattler*," Sunday, 13th April.

H.	K	F.	Courses.	Winds. D.	Winds. F.	State of Weather.	Sea.	Lee-way.	REMARKS, &c.
1			At single anchor Hollesley Bay.	West	2	g. o. r.			A. M.—4. Up steam. — 5. Shortened in cable. — 5. 30. Weighed and proceeded. — 5.44.10. chron. Alecto, abeam one cable's length.—7.15. Observed Alecto stop; shortened sail, and rounded to.—7. 20. Proceed full speed, Alecto in company.—8. Alecto E. N. E. three miles.—9. 30. Running through the King's Channel.—10. Passed Sheers light; out jib-boom.—11. Showed numbers to flag-ship at Sheerness.
2									
3									
4				„	„	g. m. r.			
5									
6	4	„	S.W. by S.						
7	8	2			3				
8	9	„	W. by S.	W.S.W.	„	„			
9	9	„	W ½ S.		4				
10	9	„	W. by S.		6				
11	Running up the Thames.								
12				„	„	„			

Course.	Distance. Made Good.	Distance. Through Water.	Effects of Current or Sea.	Latitude. Obs.	Latitude. Acc.	Longitude. Obs.	Longitude. Acc.	Bearings and Distance.
„	„	„	„	„	„	„	„	Running up the Thames.

1			Running up the Thames.					P.M.—2.40.
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

H. Smith, Commander.

Appendix, No. 18.

COPY of a LETTER from *R. R. Smith*, Esq. to Viscount *Jocelyn*, M.P., Chairman. App. No. 18.

47, Dominick-street, Dublin,
14 May 1851.

Sir,

REFERRING to my examination before the Committee on Steam Communication with India, &c., I take the liberty of submitting, for the consideration of the Committee, the accompanying remarks respecting the route by which steam extension to Australia may be effected.

I have, &c.
R. R. Smith.

The routes by which a Steam Communication with Australia may be effected are,—

1st. By branch packet from Panama.
2d. By branch packet from Cape of Good Hope.
3d. By branch from Ceylon to Sydney, by Bass's Straits.
4th. By branch from Singapore to Sydney, by Torres' Straits.
5th. By branch from Singapore to Sydney, by Bass's Straits.

No. 1. The rapidly increasing importance of the western coast of America has strengthened the reasons in favour of steam communication with Australia by Panama; yet as the distance for steam extension is 8,000 miles direct from Panama to Sydney, it will for some time, I apprehend, be a serious difficulty in the way, as regards the adoption of this route, the question being altogether one of expense.

No. 2. In respect to the route by the Cape of Good Hope, the recent establishment of steam communication to the latter colony, nearly mid-way between Great Britain and New South Wales, is a reason in favour of this line. However, the voyage between the Cape and King George's Sound would have to be made without any intermediate place for coaling, whilst the total distance for steam extension to Sydney will be 7,070 miles.

App. No. 18.

Either of the two above-mentioned lines possesses one advantage over a connexion with the India and China line; the fare for passengers will be much less by either of the former than by the latter, which, at the present rates of the Peninsular and Oriental Company, will preclude any very large number of passengers availing themselves of it.

In other respects the connexion with the India and China line appears most desirable. Were it, however, adopted, there is still much difference of opinion as to the point on the line whence the packet to Australia is to branch, as well as to whether it shall proceed by the northern and eastern, or by the western and southern coast of Australia.

I will proceed to state generally what appear to me to be the advantages respectively of each.

No. 3. The relative geographical position of Ceylon and the Australian colonies, shows that the line from England will be more direct by a branch from Ceylon than from Singapore; and as the communication between the one port and the mother country is only monthly, but with the other bi-monthly (the additional communication being *viâ* Bombay), the advantage of the former connexion will be, that should the steamer from Australia on any occasion arrive too late for the packet to which it was intended to be fitted, a comparatively short time will be expended in waiting for the succeeding despatch.

A disadvantage attending the line is, that during six months of the year a vessel from Ceylon to Western Australia will have to contend with the south-east monsoon, which, during a part of the voyage, will be directly opposed to her course.

As, however, the whole question is one of expense, and as the distance for steam extension will be shorter from Singapore than Ceylon, it is probable that the former will be fixed upon as the port whence the branch packet to Australia shall start; in which case, is the route by Torres' Straits or by Bass's Straits the most desirable?

No. 4. The chief advantage of the former line compared with the latter, consists in this, that perhaps less powerful steamers will be required, as generally speaking the sea is smoother on the north and east coast of New Holland, than on the west and south coasts.

The disadvantages are, that Torres' Straits abounding in reefs and shoals, the navigation through it is more or less dangerous. Unless lighthouses are erected on certain spots in the straits, the steamer must anchor at night, of course adding to the time consumed in the voyage.

Another disadvantage attending this route is, that by it, in a great measure, the accommodation of only one colony is provided for.

No. 5. The adoption of the Bass's Straits will enable the packet to touch successively at Western Australia, South Australia, and Port Phillip (where the mails for Van Diemen's Land may be dropped), on her way to Sydney.

If steam be extended by Torres' Straits to Sydney, to admit of the inhabitants of the other colonies participating in the benefits resulting from the arrangement, a branch line or lines must be established, of course adding considerably to the expense.

The

The inhabitants of South Australia having to travel about 2,400 miles further, *viâ* Torres' Straits, than by Western Australia to England, would be so much longer on their voyage, and be at so much more trouble and expense, that it is doubtful whether they would, to any extent, avail themselves of the steam communication.

Considering the question with a view to it as a profitable undertaking, the great object must be to devise such a route as will combine the probability of a maximum of revenue with a minimum of expense.

By calling at each colony in succession, every inducement will be held out to persons to proceed by the packet.

Therefore by the adoption of the Bass's Straits line, the following objects will be attained: a periodical postal communication between the mother country, India, and each colony in Australia, together with a periodical inter-colonial communication will be established, whilst the allowance from Government for conveyance of the mails, and the whole amount of receipts from passengers, &c., will be appropriated to the support of the one packet arrangement.

It appears to me that as the difference in distance by either route is so small, but one good reason can be assigned in favour of the Torres' Straits line, viz., the probability of vessels of less tonnage and power being sufficient for that line than for the other, and, so far, a smaller expense incurred. However, I doubt whether this is not counterbalanced by the dangers of the Straits in question, whilst the advantages before-mentioned are consequent upon a communication by Bass's Straits, and are chiefly attainable by it.

The distances for steam extension to Sydney by the three routes are nearly as follows:

From Ceylon to Fremantle (W. A.) - -	3,072 miles
From Fremantle to Adelaide - - -	1,284 „
From Adelaide to Melbourne - - -	533 „
From Melbourne to Sydney - - - -	560 „
	5,449

By Torres Straits.

INNER ROUTE:

From Singapore to Port Essington - -	1,980 miles
From Port Essington to Sydney - - -	2,215 „
	4,195

OUTER ROUTE:

From Singapore to Port Essington - -	1,980 miles
From Port Essington to Sydney - - -	2,374 „
	4,354

App. No. 18.

By Bass's Straits.

From Singapore to Fremantle (W. A.) - -	2,130 miles
From Fremantle to Adelaide - - -	1,284 „
From Adelaide to Melbourne - - -	533 „
From Melbourne to Sydney - - - -	560 „
	4,507

The number of letters between the different colonies and Great Britain, of inter-colonial letters, and of letters to and from India, the Cape of Good Hope, and the Mauritius, was for the years respectively annexed, as follows:

	Year.	Great Britain.		Singapore and China.		Cape of Good Hope and the Mauritius.		Inter-colonial.
		Sent.	Received.	Sent.	Received.	Sent.	Received.	
New South Wales - -	1844	68,659	69,254	3,690	3,807	668	420	16,201
Port Phillip (now Victoria) -	1844	14,629	10,903	29	459	29	134	7,687
Van Diemen's Land - -	1844	31,529	22,143	567	157	258	245	20,089
South Australia - - -	1845	9,280	8,494	172	382	171	501	6,654
Western Australia - -	1846	3,303	3,017	237	124	98	230	952
New Zealand - - -	1845	9,188	8,932	43	136	16	38	8,170
		136,588	122,833	4,738	5,065	1,240	1,568	59,744

The correspondence in all the colonies, excepting, perhaps, Western Australia, has much increased since the above-named years, especially in South Australia and Port Phillip.

R. R. Smith.

10 May 1851.

Appendix, No. 19.

Pacific Steam Navigation Company,
1, Rumford-street, Liverpool,
17 May 1851.

My Lord,

It having been clearly shown in evidence that the vessels which have been proposed by the Pacific Steam Navigation Company, for the performance of the mail service with Australia, by way of the Isthmus of Panama, would attain an average speed of nine knots per hour, instead of eight-and-a-half knots, the rate on which the tables already handed in by me are based, I am instructed by the directors of the company to lodge with your Lordship, for the information of the Committee, the accompanying Tables, calculated on an average speed of nine knots per hour, and including the important settlement of Adelaide, in addition to those named in the previous Tables. App. No. 19.

According to the Tables now submitted, the mail service with England would be, for the undermentioned, as follows:—

		Time on Passage.		Course of Post, including Stoppages.		Time for answering Letters.	
		Days.	Hours.	Days.	Hours.	Days.	Hours.
1	England to New Zealand	55	1	133	–	25	–
2	„ Port Jackson	61	15	–	–	11	18
3	„ Newcastle (Hunter's River)	62	9	–	–	2	4
4	„ Maitland	63	1	–	–		
5	„ Brisbane (Moreton Bay)	64	13	–	–	1	12
6	„ Twofold Bay	63	1	–	–	9	2
7	„ Port Phillip	64	21	–	–	5	7
8	„ Adelaide	66	18	–	–	1	5
9	„ Hobart Town, or Launceston	64	23	–	–	4	–

It may also be observed that 3 days 12 hours have been allowed for the transit of the Isthmus of Panama; whereas, on the completion of the railway, six hours will suffice.

I am further to state, that should Her Majesty's Government require, for the performance of this service, larger or more powerful vessels, so as to ensure greater expedition, the Directors of the Pacific Steam Navigation Company will be prepared to comply, on being allowed an increase of remuneration adequate to the extra expense that would be thereby incurred by the company.

I have, &c.
(signed) *William Just.*

To the Right Hon. Lord Viscount Jocelyn, M.P.
Chairman.

Pacific

Pacific Steam Navigation Company,
Liverpool, 1851.*

PROFORMA Monthly Mail Service, between *Panama, New Zealand,* and *Australia,* and *vice versa,* touching at *Otaheite,* on the Outward Voyage, to be performed by Five Screw Steamers of 1,200 tons, and 200 horse-power each.

TABLE OF SAILINGS.

Dates. Arrive.	Dates. Depart.	Places.	Distance in Miles.	Total Distance.	Consumption of Coals according to Distance, average 20 Tons a day.	Nine Knots per Hour Steaming		Stoppages.		Total Round Voyage.	
						D.	H.	D.	H.	D.	H.
	23d April, noon	From Panama:									
14th May, 8 A.M.	16th May, 8 P.M.	- - To Otaheite, Tampiete.	4,500	- -	417	20	20	1	12		
26th „ 1 A.M.	27th „ 7 A.M.	To Bay of Islands	2,205	- -	204	10	5	1	6		
1st June, 3 P.M.	13th June, 9 A.M.	To Port Jackson	1,155	- -	106	5	8	—			
				7,860	727	36	9	2	18		
										39	3
					Stoppage at Port Jackson -					11	18
18th June, 7 P.M.	20th June, 1 A.M.	To Port Nicholson	1,170	- -	108	5	10	1	6		
20th July, 10 P.M.	- - -	To Panama -	6,664	- -	618	30	21	—			
				7,834	726	36	7	1	6		
										37	13
				15,694							

Under the foregoing Table each screw ship would, in succession, have a lay up or rest of one month at Panama, for overhaul or repair, and the mail service with England would be performed as under:

	Days.	Hrs.	Days.	Hrs.
Southampton to Chagres, by the new ships of the Royal Mail Steam Packet Company	19	–		
Chagres to Panama (When the railway across the Isthmus shall have been completed, this time will be reduced to one day).	3	12		
Panama to Port Jackson, including intermediate stoppages - -	39	3		
			61	15
Port Jackson to Panama - - - - - - - - -	37	13		
Panama to Chagres - - - - - - - - - -	3	12		
Chagres to Southampton - - - - - - - - -	19	–		
			60	1
Thus the Round Voyage performed in - - - *			121	16

The time occupied between England and New Zealand, Outward, 55 days, 1 hour; Homeward, 53 days, 9 hours.

By the vessels now proposed, fuel sufficient for the run might be carried, in addition to 200 tons of cargo, even were it necessary to keep them under steam during the whole of the time. The company have already a coal depot at Panama, and reserves, in cases of need, may be kept in store at Otaheite, Bay of Islands, and Port Nicholson. With reference to the proposed speed of nine knots per hour, the Directors of the company are assured, by competent authority, that, with the vessels proposed, in the waters of the Pacific that average speed may be safely calculated on.

* It will be observed that this is exclusive of the proposed stoppages at Port Jackson, of 11 days, 18 hours.

INTER-COLONIAL Mail Service, as proposed to the Pacific Steam Navigation Company, by the Hunter's River Steam Company.

TABLES OF SAILINGS—NORTH ROUTE.

TABLE No. 1.

Dates. Arrive.	Dates. Depart.	Places.	Distance in Miles.	Total Distance.	Time Occupied. Steaming at 9 Miles per Hour.	Time Occupied. Stoppages.	Time Occupied. Total Round Voyage.
					Days. Hrs.	Days. Hrs.	Days. Hrs.
	2d June, 1 A.M.	From Sydney:					
2d June, 9 A.M.	„ 9 P.M.	- - To Newcastle (Hunter's River).	70	- -	- 8	- 12	
3d „ 1 A.M.	4th „ 1 P.M.	- - To Maitland (Hunter's River).	30	- -	- 4	1 12	
				100	- 12	2 -	
4th „ 5 P.M.	„ 7 P.M.	- - To Newcastle (Hunter's River).	30	- -	- 4	- 2	
5th „ 3 A.M.	- - -	To Sydney -	70	- -	- 8	—	
				100	- 12	- 2	
				200	1 -	2 2	3 2

TABLE No. 2.

Dates. Arrive.	Dates. Depart.	Places.	Distance in Miles.	Total Distance.	Time Occupied. Steaming at 9 Miles per Hour.	Time Occupied. Stoppages.	Time Occupied. Total Round Voyage.
					Days. Hrs.	Days. Hrs.	Days. Hrs.
	2d June, 1 A.M.	From Sydney;					
4th June, 1 P.M.	6th „ 1 A.M.	- - To Brisbane (Moreton Bay).	540	- -	2 12	1 12	
8th „ 1 P.M.	- - -	To Sydney -	540	- -	2 12	—	
				1,080			6 12

TABLE OF SAILINGS—SOUTH ROUTE.

TABLE No. 1.

Dates.		Places.	Distance in Miles.	Total Distance.	Time Occupied.		
Arrive.	Depart.				Steaming at 9 Miles per Hour.	Stoppages.	Total Round Voyage.
					Days. Hrs.	Days. Hrs.	Days. Hrs.
	2d June, 1 A. M.	From Sydney:					
4th June, 11 P.M.	8th „ 11 P. M.	To Hobart Town	628	- - 628	2 22	4 -	
11th „ 9 P. M.	- - -	To Sydney -	628				
				628	2 22	—	
				1,256			9 20

TABLE No. 2.

Dates.		Places.	Distance in Miles.	Total Distance.	Time Occupied.		
Arrive.	Depart.				Steaming at 9 Miles per Hour.	Stoppages.	Total Round Voyage.
					Days. Hrs.	Days. Hrs.	Days. Hrs.
	2d June, 1 A. M.	From Sydney:					
3d June, 1 A. M.	3d „ 4 A. M.	To Twofold Bay	218	- -	1 -	- 3	
4th „ 9 P. M.	5th „ 1 A. M.	To Port Phillip	367	- -	1 17	- 4	
6th „ 6 „	7th „ 11 P. M.	To Adelaide -	372	- -	1 17	1 5	
				957	4 10	1 12	
9th „ 4 P. M.	10th „ 4 A. M.	To Port Phillip	372	- -	1 17	- 12	
11th „ 9 „	12th „ 3 A. M.	To Twofold Bay	367	- -	1 17	- 6	
13th „ 3 A. M.	- - -	To Sydney -	218	- -	1 -	—	
				957	4 10	- 18	
				1,914	8 20	2 6	11 2

Appendix, No. 20.

App. No. 20.

RETURN of the Number, Cost, Ages, Power, Tonnage, Passenger Accommodation, Mode of Propulsion, and Speed of STEAM VESSELS forming the INDIAN NAVY, distinguishing the Vessels employed on the *Bombay* Mail Line; also, a TABULAR RETURN of the Number of Days and Hours occupied by each on the Voyages between *Bombay* and *Aden* and *Suez*, since 1 January 1847; also, Copies of all present Regulations as to Freight and Passage Money in Vessels of the Indian Navy on *Bombay* Line; also, RETURN, approximate or otherwise, of all Money expended by the East India Company in their Naval Yards, Docks, and Establishments at the Port of *Bombay* since the 1st January 1840; also, RETURN, approximate or otherwise, of the Total Annual Cost to the Indian Exchequer of the Postal part of the Indian Navy, and of the Total Annual Postal Mileage performed by said Vessels.

East India House,
23 May 1851.

James C. Melvill,
Secretary.

RETURN

RETURN of the Number, Cost, Ages, Power, Tonnage, Passenger Accommodation, distinguishing the Vessels employed on the *Bombay*

Number.	Names of Vessels.	Cost.	Ages.	Horse Power.	Tonnage.
		£. s. d.			
1	Acbar - - -	76,373 9 8	built 1841	350	1,143
2	Ajdaha - -	80,515 16 5	„ 1847	500	1,440
3	Atalanta - -	36,651 17 10	„ 1835	210	616
4	Auckland - -	43,052 3 2	„ 1840	220	946
5	Berenice - -	40,123 11 6	„ 1835	230	664
6	Feerooz - -	67,219 - -	„ 1846	500	1,440
7	Medusa (iron) -	9,972 18 1	„ 1840	70	432
8	Moozuffer - -	81,576 9 6	„ 1846	500	1,440
9	Queen - -	44,409 17 11	„ 1839	220	760
10	Semiramis - -	43,447 12 8	„ 1840	300	1,000
11	Sesostris - -	52,388 8 2	„ 1839	220	876
12	Victoria - -	39,820 15 6	„ 1839	230	714

Note.—The Vessels for general service are employed on the Bombay Mail Line in the S. W. Monsoon, between Bombay and Aden. It has been usual to employ independently of each other; also to provide against accidents to the mail vessels Indian Navy purposes, without disturbing the regularity of the mail service; the

There is not in the India House a plan of the "passenger accommodation" of detail being managed in the department of the Commander-in-Chief of the Indian been conveyed in each vessel, and it is taken by an average of her passages in the

The column with respect to "speed," is filled in upon a similar principle, in the which follow.

Marine Department, East India House,
19 May 1851.

mode of Propulsion, and Speed of Steam Vessels forming the Indian Navy, Mail Line, so far as the same can be made out.

Passenger Accommodation.				Mode of Propulsion.	Speed.	
1st Class.	*2d Class.*	*Children.*	*Servants, Government Passengers, &c.*		*Knots per Hour.*	
20	3	5	10	paddle wheels	8 ½	Employed on the Bombay Mail Line.
20	5	4	6	,, ,,	8	
28	3	10	8	,, ,,	7 ¼	
- -	- -	- -	- -	,, ,,	- -	General Service.
- -	- -	- -	- -	,, ,,	- -	
16	1	2	6	,, ,,	8 ⅔	-- Employed on the Bombay Mail Line.
- -	- -	- -	- -	,, ,,	- -	
- -	- -	- -	- -	,, ,,	- -	
- -	- -	- -	- -	,, ,,	- -	General Service.
- -	- -	- -	- -	,, ,,	- -	
- -	- -	- -	- -	,, ,,	- -	
14	2	5	28	,, ,,	6 ⅝	-- Employed on the Bombay Mail Line.

occasionally, in case of accident to, or during the repair of the regular Packets, or five vessels for the mail service, so that the up and down lines may be worked while in the Red Sea, and to have a vessel always available there in case of need, for vessels are frequently so used.

each vessel; neither are lists of passengers regularly transmitted there, the whole Navy at Bombay. The number of passengers therefore, is given above, as having four years commencing with 1847.

absence of more specific data, as stated in the note at the foot of the tabular returns

J. C. Mason.

TABULAR RETURN of the Number of Days and Hours occupied by each of the Voyages from *Bombay* to *Aden*

Date of Leaving Bombay.	Names of Vessels.	Arrived at Aden.	Time occupied from Bombay to Aden.		Detention at Aden.		Average Speed from Bombay to Aden.	
1847:		1847:	*Days.*	*Hrs.*	*Days.*	*Hrs.*	*Knots per Hour.*	
2 January -	Atalanta - -	10 January	9	20	1	2	7	
1 February	Semiramis -	9 February	7	12	0	13	9 1/8	
2 March -	Acbar - -	9 March -	7	3	0	21 1/2	9 5/8	
2 April -	Semiramis -	10 April -	8	8	0	13 1/2	8 1/2	
1 May -	Atalanta - -	10 May -	9	15	0	8 1/2	7 1/8	
20 „ -	Victoria - -	3 June -	13	15	1	4 1/4	5	Against the S. W. Monsoon.
20 June -	Acbar - -	4 July -	14	1	-	-	4 7/8	
20 July -	Semiramis -	4 August -	15	13	-	-	4 1/2	
31 August -	Acbar - -	10 September	10	4	0	21 1/4	6 3/4	
1 October -	Semiramis -	10 October	8	18	1	2	8	
2 November	Atalanta - -	11 November	8	7	0	15 1/2	8 1/4	
1 December	Victoria - -	9 December	7	22	0	14	8 5/8	
1848:		1848:						
1 January -	Acbar - -	8 January	7	4	0	23 1/2	9 5/8	
1 February	Atalanta - -	9 February	8	3	0	19 1/2	8 1/2	
2 March -	Victoria - -	11 March -	8	10	0	8 1/2	8 1/4	
1 April -	Ajdaha - -	9 April -	8	1	0	23	8 1/2	
1 May -	Atalanta - -	11 May -	9	7	0	12	7 3/8	
20 „ -	Victoria - -	2 June -	13	2	1	18	5 1/4	Against the S. W. Monsoon.
20 June -	Acbar - -	2 July -	12	3	-	-	5 5/8	
20 July -	Ajdaha - -	2 August -	13	11	-	-	5 1/8	
31 August -	Acbar - -	11 September	10	18	0	19	6 3/8	
3 October -	Ferooz - -	12 October	8	18	0	22	8	
2 November	Victoria - -	11 November	8	17	-	-	8	
3 December	Acbar - -	10 December	7	5	0	20 1/4	9 5/8	

the STEAM VESSELS of the Indian Navy employed on the *Bombay* Mail Line on and *Suez*, since the 1st January 1847.

Date of Leaving Aden.	Names of Vessels.	Arrived at Suez.	Time occupied from Aden to Suez.		Average Speed from Aden to Suez.	Actual Time occupied from Bombay to Suez.	
1847:		1847:	*Days.*	*Hrs.*	*Knots per Hr.*	*Days.*	*Hrs.*
11 January	Atalanta - -	18 January	7	2	7 3/4	16	22
9 February	Semiramis - -	17 February	7	6	7 1/2	14	18
10 March -	Acbar - - -	16 March -	5	17	11 1/4	12	20
10 April -	Semiramis - -	18 April -	7	21	7	16	5
10 May -	Atalanta - -	18 May -	7	19	7	17	10
4 June -	Victoria - -	12 June -	7	21	7	21	12
5 July -	Atalanta - -	15 July -	9	18	5 5/8	23	19
5 August -	Victoria - -	12 August -	7	7	7 1/8	22	20
11 September	Acbar - - -	18 September	6	18	8 1/8	16	22
11 October	Semiramis - -	19 October	7	19	7	16	13
11 November	Atalanta - -	18 November	7	5	7 1/2	15	12
10 December	Victoria - -	16 December	6	12	8 3/8	14	10
1848:		1848:					
9 January	Acbar - - -	15 January	5	18	11 1/4	12	22
10 February	Atalanta - -	18 February	7	10	7 3/8	15	13
11 March -	Victoria - -	19 March -	8	0	7	16	10
10 April -	Ajdaha - -	17 April -	6	5	9	14	6
11 May	Atalanta - -	19 May -	7	22	7	17	5
4 June -	Victoria - -	13 June -	8	10	6 1/2	21	12
3 July -	Atalanta - -	11 July -	8	7	6 5/8	22	8
3 August -	Victoria - -	12 August -	8	19	6 1/4	22	6
12 September	Acbar - - -	19 September	7	3	7 5/8	17	21
13 October	Feerooz - -	20 October	6	8	8 5/8	15	2
11 November	Ajdaha - -	17 November	6	5	9	14	22
11 December	Acbar - - -	18 December	6	14	8 1/4	13	19

(*continued*)

Date of Leaving Bombay.	Names of Vessels.	Arrived at Aden.	Time occupied from Bombay to Aden.		Detention at Aden.		Average Speed from Bombay to Aden.	
1849:		1849:	*Days.*	*Hrs.*	*Days.*	*Hrs.*	*Knots per Hour.*	
3 January -	Ajdaha - -	10 January	7	3	0	19	9 3/8	
3 February	Feerooz - -	11 February	7	11	0	15	9 1/8	
4 March -	Acbar - -	12 March -	7	18	0	19	9	
3 April -	Ajdaha - -	11 April -	8	3	0	19 1/2	8 1/2	
1 May -	Atalanta - -	11 May -	9	9	0	21 1/4	7 3/8	
21 May -	Victoria - -	3 June -	12	13	1	7	5 1/2	Against the S.W. Monsoon.
25 June -	Moozuffer -	7 July -	No Log received.					
25 July -	Feerooz - -	8 August -	Ditto.					
1 September	Ajdaha - -	12 September	10	15	0	19 1/2	6 1/2	
3 October -	Acbar - -	11 October	8	0	0	22 1/2	8 1/2	
3 November	Victoria - -	13 November	9	21	0	22	7	
3 December	Ajdaha - -	11 December	7	10	0	14	9 1/4	
1850:		1850:						
3 January -	Acbar - -	11 January	7	9	0	15	9 1/4	
4 February	Victoria - -	13 February	9	4	0	17	7 1/2	
2 March -	Ajdaha - -	10 March -	7	22	1	1	8 5/8	
3 April -	Acbar - -	12 April -	8	18	1	8 1/2	8	
1 May -	Atalanta - -	11 May -	10	3	0	19	6 3/4	
25 May -	Acbar - -	5 June -	10	9	1	2 1/2	6 5/8	Against the S.W. Monsoon.
25 June -	Feerooz - -	8 July -	No Log received.					
25 July -	Moozuffer -	10 August -	Ditto.					
31 August -	Ajdaha - -	12 September	11	8	0	16 1/2	6	
3 October -	Feerooz - -	11 October	7	20	1	0	8 3/4	
2 November	Ajdaha - -	10 November	8	2	0	20	8 1/2	
3 December	Feerooz - -	11 December	7	7	0	16	9 1/4	

Date of Leaving Aden.	Names of Vessels.	Arrived at Suez.	Time occupied from Aden to Suez.		Average Speed from Aden to Suez.	Actual Time occupied from Bombay to Suez.	
1849:		1849:	*Days.*	*Hrs.*	*Knots per Hr.*	*Days.*	*Hrs.*
11 January	Ajdaha - -	17 January	6	6	9	13	9
11 February	Feerooz - -	18 February	6	9	8 5/8	13	20
13 March -	Acbar - -	19 March -	6	6	8 3/4	14	0
12 April -	Ajdaha - -	18 April -	6	4	9	14	7
12 May -	Atalanta - -	21 May -	9	22	5 1/2	19	7
4 June -	Victoria - -	14 June -	9	17	5 5/8	22	6
7 July -	Atalanta - -	15 July -	8	2	6 7/8	—	
8 August -	Atalanta - -	17 August -	8	22	6 1/8	—	
13 September	Ajdaha - -	19 September	6	16	8 1/4	17	7
12 October	Acbar - -	19 October	6	10	8 3/8	14	10
14 November	Victoria - -	22 November	7	23	7	17	20
11 December	Ajdaha - -	18 December	6	18	8 1/8	14	4
1850:		1850:					
11 January	Acbar - - -	19 January	7	6	7 1/2	14	15
14 February	Victoria - -	22 February	8	1	7	17	5
11 March -	Ajdaha - -	18 March -	6	19	8 1/8	14	17
13 April -	Acbar - - -	20 April -	6	4	9	14	22
12 May -	Atalanta - -	20 May -	7	19	7	17	22
6 June -	Acbar - - -	14 June -	8	2	6 7/8	18	11
8 July -	Atalanta - -	17 July -	8	20	6 1/8	—	
10 August -	Acbar - - -	18 August -	7	17	7 1/8	—	
12 September	Ajdaha - -	20 September	8	4	6 7/8	19	12
12 October	Feerooz - -	18 October	6	7	8 3/4	14	3
11 November	Ajdaha - -	19 November	7	19	7	15	21
11 December	Feerooz - -	19 December	7	3	7 5/8	14	10

App. No. 20.

TABULAR RETURN of the Number of Days and Hours occupied *Bombay* Mail Line, on the Voyages from *Suez* to *Aden* and *Bombay*,

Date of Leaving Suez.	Names of Vessels.	Arrived at Aden.	Time Occupied from Suez to Aden.	
1847:		1847:	*Days.*	*Hrs.*
27 January -	Atalanta - - - -	4 February	8	0
24 February	Semiramis - - - -	4 March -	8	0
22 March -	Victoria - - - -	30 „ -	8	0
25 April -	Acbar - - - -	1 May -	6	0
23 May -	Semiramis - - - -	30 „ -	7	0
21 June -	Atalanta - - - -	27 June -	6	7
	Acbar - - - -	29 July -	-	-
	Semiramis - - - -	- - -	-	-
22 September	Victoria - - - -	- - -	-	-
23 October -	Acbar - - - -	- - -	-	-
24 November	Atalanta - - - -	- - -	-	-
29 December	Semiramis - - - -	- - -	-	-
		1848:		
23 January -	Victoria - - - -	30 January	7	0
22 February	Atalanta - - - -	- - -	-	-
22 March -	Victoria - - - -	- - -	-	-
21 April -	Acbar - - - - -	- - -	-	-
22 May -	Ajdaha - - - -	- - -	-	•
22 June -	Atalanta - - - -	28 June -	6	7
20 July -	Victoria - - - -	27 July -	6	9
22 August -	Atalanta - - - -	27 August -	5	0
21 September	Victoria - - - -	- - -	-	-
20 October -	Acbar - - - -	- - -	-	-
22 November	Ajdaha - - - -	- - -	-	-
21 December	Feerooz - - - -	- - -	-	-

by each of the Steam Vessels of the Indian Navy employed on the since the 1st of January 1847, so far as the same can be made out.

Left Aden.	Names of Vessels.	Arrived at Bombay.	Time Occupied from Aden to Bombay.	Time Occupied from Suez to Bombay.
1847:		1847:	*Days.*	*Days. Hrs.*
4 February	Atalanta - -	14 February	10	18 0
4 March -	Semiramis - -	13 March -	9	17 0
30 „	Victoria - -	8 April -	9	17 0
29 April -	Acbar - - -	6 May -	7	13 0
30 May -	Semiramis - -	6 June - -	7	14 0
28 June -	Auckland - -	6 July -	8	14 7
29 July -	Acbar - - -	5 August -	7	—
28 August -	Semiramis - -	7 September	10	—
29 September	Victoria - -	8 October	9	—
30 October	Acbar - - -	9 November	10	—
3 December	Atalanta - -	14 December	11	—
8 Jan. 1848	Semiramis - -	18 Jan. 1848	10	19 0
1848:		1848:		
30 January	Victoria - -	9 February	10	17 0
1 March -	Atalanta - -	10 March -	9	—
31 „	Victoria - -	9 April -	9	—
28 April -	Acbar - - -	6 May -	8	—
29 May -	Ajdaha - -	5 June -	7	—
29 June -	Sesostris - -	6 July -	7	13 7
27 July -	Acbar - - -	3 August -	7	13 9
28 August -	Ajdaha - -	4 September	7	12 0
29 September	Victoria - -	9 October	10	—
27 October	Acbar - - -	5 November	9	—
30 November	Ajdaha - -	8 December	8	—
28 December	Feroooz - -	6 Jan. 1849	9	—

(*continued*)

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Date of Leaving Suez.	Names of Vessels.	Arrived at Aden.	Time Occupied from Suez to Aden.	
1849:		1849:	*Days.*	*Hrs.*
22 January -	Acbar - - - - -	- - -	-	-
21 February	Ajdaha - - - -	27 February	6	0
23 March -	Feerooz - - - -	29 March -	6	0
20 April -	Acbar - - - -	- - -	-	-
20 May -	Ajdaha - - - -	- - -	-	-
21 June -	Atalanta - - - -	28 June -	6	18
20 July -	Ditto - - - -	27 July -	6	18
20 August -	Victoria - - - -	27 August -	7	0
21 September	Atalanta - - - -	- - -	-	-
22 October -	Ajdaha - - - -	- - -	-	-
22 November	Acbar - - - -	- - -	-	-
24 December	Victoria - - - -	- - -	-	-
1850:		1850:		
21 January -	Ajdaha - - - -	- - -	-	-
21 February	Acbar - - - -	- - -	-	-
20 March -	Victoria - - - -	- - -	-	-
21 April -	Acbar - - - -	- - -	-	-
20 May -	Ajdaha - - - -	- - -	-	-
20 June -	Atalanta - - - -	27 June -	6	10
	Acbar - - - -	- - -	-	-
22 August -	Atalanta - - - -	- - -	-	-
22 September	Ajdaha - - -	- - -	-	-
21 October -	Feerooz - - - -	- - -	-	-
20 November	Acbar - - - -	- - -	-	-
20 December	Ajdaha - - - -	28 December	8	0

Note.—The Bombay Government are charged with the whole and Suez; and the logs of the steam-vessels and other documents mander-in-Chief of the Indian Navy at that presidency, are not the means of making a more complete return to the order of the

App. No. 20.

Left Aden.	Names of Vessels.	Arrived at Aden.	Time Occupied from Aden to Suez.	Time Occupied from Suez to Bombay.
1849:		1849:	*Days.*	*Days. Hrs.*
29 January	Acbar - - -	7 February	9	—
27 February	Ajdaha - -	8 March -	9	15 0
30 March -	Feerooz - -	6 April -	7	13 0
27 April -	Acbar - - -	5 May -	8	—
26 May -	Ajdaha - -	3 June -	8	—
28 June -	Queen - - -	7 July -	9	15 18
27 July -	Moozuffer - -	4 August -	8	14 18
27 August -	Feerooz - -	3 September	7	14 0
29 September	Atalanta - -	9 October -	10	—
29 October	Ajdaha - -	7 November	9	—
29 November	Acbar - - -	9 December	10	—
5 Jan. 1850	Victoria - -	14 Jan. 1850	9	—
1850:		1850:		
29 January	Ajdaha - -	7 February	9	—
28 February	Acbar - - -	8 March -	8	—
30 March -	Victoria - -	9 April -	10	—
29 April -	Acbar - - -	7 May -	8	—
27 May -	Ajdaha - -	4 June -	8	—
27 June -	Auckland - -	6 July -	9	15 10
28 July -	Feerooz - -	3 August -	6	—
30 August	Sesostris - -	7 September	8	—
30 September	Ajdaha - -	9 October -	9	—
28 October	Feerooz - -	6 November	9	—
29 November	Acbar - - -	9 December	10	—
28 December	Ajdaha - -	5 Jan. 1851	8	16 0

management of the Mail Steam Communication between Bombay connected therewith, being records of the department of the Com- furnished in detail to the Court of Directors, who have not therefore Honourable the Select Committee.

App. No. 20.

TABULAR RETURN of the Number of Days occupied by each of the Steam Vessels of the Indian Navy employed in the Conveyance of the Bi-monthly Mails between *Bombay* and *Aden*, since 1st January 1847, so far as the same can be made out.

Date of Leaving Bombay.	Names of Vessels.	Arrived at Aden.	Time Occupied from Bombay to Aden.
1847.			*Days.*
15 January -	Cleopatra - - - -	—	—
16 February	Queen - - - -	—	—
15 March -	Auckland - - - -	26 March -	11
15 April -	Moozuffer - - - -	24 April -	9
12 May -	Auckland - - - -	May -	—
15 October -	Queen - - - -	30 October	15
15 November	Sesostris - - - -	28 November	13
15 December	Queen - - - -	29 December	14
1848.			
16 January -	Sesostris - - - -	24 January	8
15 February	Queen - - - -	26 February	11
15 March -	Sesostris - - - -	24 March -	9
15 April -	Moozuffer - - - -	24 April -	9
12 May -	Sesostris - - - -	23 May -	11
15 September	Semiramis - - - -	26 September	11
17 October -	Ajdaha - - - -	26 October	9
16 November	Sesostris - - - -	25 November	9
18 December	Victoria - - - -	28 December	10
1849.			
20 January -	Sesostris - - - -	28 January	8
17 February	Victoria - - - -	26 February	9
17 March -	Moozuffer - - - -	25 March -	8
17 April -	Feerooz - - - -	25 April -	8
12 May -	Sesostris - - - -	22 May -	10
17 September	Auckland - - - -	7 October	20
17 October -	Queen - - - -	27 „	10
17 November	Auckland - - - -	27 November	10
17 December	Moozuffer - - - -	24 December	7
1850.			
17 January -	Sesostris - - - -	23 January	6
17 February	Moozuffer - - - -	24 February	7
16 March -	Sesostris - - - -	24 March -	8
17 April -	Moozuffer - - - -	27 April -	10
11 May -	Sesostris - - - -	23 May -	12
17 September	Moozuffer - - - -	28 September	11
17 October -	Sesostris - - - -	October	—
16 November	Queen - - - -	25 November	9
16 December	Sesostris - - - -	26 December	10

App. No. 20.

Date of Leaving Aden.	Names of Vessels.	Arrival at Bombay.	Time Occupied from Aden to Bombay.
1847:			*Days.*
20 January -	Queen - - - -	30 January	10
21 February	Cleopatra - - - -	2 March -	9
20 March -	Queen - - - -	31 „	11
19 April -	Auckland - - - -	29 April -	10
17 May -	Moozuffer - - - -	27 May -	10
16 June -	Lord Stanley (Merchant Ship)	30 June -	14
16 July -	Constance (Co.'s Schooner)	25 July -	9
16 August -	Tigris (Company's Brig) -	30 August -	14
16 September	Atalanta - - - -	25 September	9
26 October -	Moozuffer - - - -	3 November	8
17 November	Queen - - - -	29 „	12
18 December	Sesostris - - - -	28 December	10
1848:			
17 January -	Queen - - - -	28 January	11
18 February	Sesostris - - - -	26 February	8
22 March -	Moozuffer - - - -	30 March -	8
19 April -	Sesostris - - - -	27 April -	8
17 May -	Moozuffer - - - -	25 May -	8
15 June -	Euphrates (Company's Brig)	25 June -	10
18 July -	Semiramis - - -	25 July -	7
17 August -	Mahi (Company's Schooner)	26 August -	9
19 September	Atalanta - - - -	27 September	8
19 October -	Semiramis - - - -	29 October	10
17 November	Victoria - - - -	28 November	11
17 December	Sesostris - - - -	28 December	11
1849:			
15 January -	Victoria - - - -	26 January	11
17 February -	Moozuffer - - - -	24 February	7
	Victoria - - - -	30 March -	—
18 April -	Moozuffer - - -	26 April -	8
17 May -	Feerooz - - - -	24 May -	7
19 June -	Tigris (Company's Brig) -	29 June -	10
19 July -	Euphrates (Company's Brig)	4 August -	16
14 August -	Sesostris - - - -	22 „	8
20 September	Victoria - - - -	29 September	9
21 October -	Auckland - - - -	31 October	10
15 November	Queen - - - -	27 November	12
20 December	Auckland - - - -	2 Jan. 1850	13

(*continued*)

App. No. 20.

Date of Leaving Aden.	Names of Vessels.	Arrival at Bombay.	Time Occupied from Aden to Bombay.
1850:			
15 January -	Moozuffer - - - -	23 January	8
15 February	Sesostris - - - -	25 February	10
18 March -	Moozuffer - - - -	25 March -	7
14 April -	Sesostris - - - -	23 April -	9
	Moozuffer - - - -	23 May -	—
13 June -	Queen - - - -	21 June -	8
14 July -	Constance (Co.'s Schooner)	24 July -	10
14 August -	Moozuffer - - - -	21 August -	7
14 September	Atalanta - - - -	23 September	9
15 October -	Moozuffer - - - -	25 October	10
14 November	Sesostris - - - -	24 November	10
16 December	Queen - - - -	29 December	13

See Note at the foot of the Tabular Return applicable to the Monthly Mail.

Marine Department, East India House, 19 May 1851. *J. C. Mason.*

COPIES of all present Regulations as to FREIGHT and PASSAGE MONEY in Vessels of the Indian Navy on *Bombay* Line.

STEAM COMMUNICATION.

RULES relative to Freight on Parcels and Packages by the Suez Steamers.

(No. 113 of 1843.)

THE Honourable the Governor in Council has been pleased to revise the rules under which parcels and packages are conveyed in the mail steamers between Bombay and Suez, and to direct that the following rules be established and in force from the 1st October next, in supercession of all former rules which have heretofore been published:—

1. All parcels shipped from Bombay by the Red Sea steamers must be paid for in advance.

2. All parcels received at Bombay by the Red Sea steamers must be paid for on delivery.

3. All

3. All parcels or packages must be distinctly addressed by name to the parties to whom they are to be delivered, and not by marks or numbers.

4. No package to be larger than one man can conveniently handle, or to weigh more than forty pounds.

5. No parcel or package is to contain any merchandise.

6. No parcel or package is to contain letters, bills, or money.

7. No more packages will be received on board than can conveniently be stowed away in each vessel, according to the discretion of the commander.

8. Particulars of the contents may be called for if thought necessary, and if refused, the package may be rejected.

9. All packages sent or received by the steamers are to be delivered at the Custom House.

10. The Government will not be responsible for any loss or damage.

11. Private treasure will be received under the regulations which have been separately notified for its conveyance; and when so conveyed, no charge for freight will be levied beyond the per centage due to the commander.

12. The postmaster-general and collector of customs respectively have authority to open any parcel that they have reason to suspect contains articles in contravention of these rules.

SCALE OF CHARGES FOR FREIGHT.

Size of Parcels.	Between Bombay and Suez or Cosseir.
¼ Cubic foot, or less	3 rupees.
½ ditto ditto	6 ditto.
¾ ditto ditto	9 ditto.
1 ditto ditto	12 ditto.
1½ ditto ditto	18 ditto.
2 ditto ditto	24 ditto.
3 ditto ditto	40 ditto.

and 20 rupees per foot additional above three feet.

By order of the Honourable the Governor in Council.

(signed) *P. M. Melvill*, Lieut.-Colonel,
Secretary to Government.

Bombay Castle, 12 September 1843.

App. No. 20.

Rules for Freight on Treasure by the Honourable Company's Steamers.

Notification.—Marine Department.

The Honourable the Governor in Council has been pleased to establish the following Rules and Regulations for the conveyance of Private Treasure by the Honourable Company's Ships and Vessels of War, and Steam Packets, to be in force from the 1st October next:—

1. Scale of Freight:	Per Cent. on the Value. On Gold or Jewels.	On Silver.
Between Bombay and Suez, and between Bombay and any port in the Red Sea, within the Straits of Babel Mandel, or *vice versâ*	1	1 ¼
Between Bombay and Aden, and between either of those places and any intermediate ports, or *vice versâ*	¾	1
Between Suez and Aden, and between either of those places and any ports in the Red Sea, or *vice versâ*	¾	1
Between Bombay and Bussorah, and between Bombay and any port in the Persian Gulf or Sea of Oman, to the westward of Muscat, or *vice versâ*	1	1 ¼
Between Bombay and Muscat, and between either of those places and any intermediate ports, or *vice versâ*	¾	1
Between Muscat and Bussorah, and between either of those places and any intermediate ports, or *vice versâ*	¾	1
Between Bombay and Ceylon, and between either of those places and any intermediate ports, or *vice versâ*	½	1
Between Bombay and all ports on the continent of India, situated to the eastward of Cape Comorin, or any ports within the limits of the Indian Seas, or *vice versâ*	1	1 ¼
Between Bombay and any ports beyond the limits of the Indian Seas, other than those above mentioned, or *vice versâ*	1 ½	2
Between any two ports within the limits of the same station	½	1

2. Should treasure of any description be deposited on board any of the Honourable Company's vessels, whether for security or any other purpose, the same rate of freight is to be levied on it as if it had

had been conveyed from one port to any other port within the limits of the same station; and in the event of its being transferred from one ship to another for security, or if it be conveyed to any other port, whether by the vessel on board of which it had been deposited or by any other vessel, new bills of lading shall be made out and the regulated amount of freight paid as if no such deposit had taken place, over and above the amount paid for its deposit.

3. Whenever treasure freight may be delivered on board of any of the Honourable Company's ships or vessels, bills of lading in the subjoined form shall be made out, signed by the officer in command of the ship, and the value and description of the freight shall be specified in it, as also the extent to which the officer signing the bill of lading shall be responsible in case of any loss or damage.

FORM.

Shipped in good order and well conditioned by
in and upon the good ship called the whereof is
commander for this present voyage and now
riding at anchor in the harbour of and bound for
being marked and numbered as in the margin,
which are to be delivered in the like good order and well conditioned
at the aforesaid port of , the act of God, the King's
enemies, fire, all and every other dangers of the seas and navigation
excepted, unto or to assigns, on
payment of freight for the said And it is hereby
stipulated and agreed between the said and the
shipper and owners, consignees of the said that in
case of loss or damage happening to the said gold, silver, jewels, or
other articles aforesaid, the captain or officer commanding such ship
or vessel as aforesaid shall not be holden liable or responsible for
more than three-fourths the amount of such loss or damage. In
witness whereof, I, the said commander of the said ship, have affirmed
to four bills of lading, all of the tenor and date, one of which four
bills being accomplished, the other three to stand void.

Dated in

A. B., Commander.

4. The amount of freight received on account of the conveyance of treasure shall be divided into eight parts, and distributed as follows; viz.:

If on a station where there is a duly appointed commodore or senior officer, one-eighth is to be apportioned to him, one-eighth to the Indian Naval Fund, and the remaining six-eighths to the captain or commanding officer of the ship or vessel.

If on a station where there is no properly appointed commodore or senior officer, one-eighth is to be appropriated to the Indian Naval Fund, and the balance of seven-eighths is to be retained by the captain or commanding officer of the ship or vessel.

It is, however, to be distinctly understood, that no commodore or senior officer shall be entitled to share in the freight on treasure, &c., unless he shall have notified his intentions to the captain or commander

App. No. 20.

mander of the vessel bearing the freight, by furnishing him with an engagement in writing in the following form :—

I, *A. B.*, am desirous of partaking in the advantages, with the risks attendant therein, arising out the conveyance of freight of treasure in any of the ships or vessels in the squadron, (or in the particular ship, as the case may be); and I hereby engage to make good to the captain or captains, officer or officers commanding such ships or vessels respectively, (or ships or vessels, as the case may be,) such part of any loss or damage for which he or they may be liable in *respect to the gold, silver, treasure, or other articles* so carried on freight, and which he or they respectively shall have actually paid and satisfied, as shall be in proportion to the share or interest in the said freight money to which I may be entitled.

5. In the event of loss or damage happening to the gold, silver, jewels, or other articles so received on freight exceeding the total freight money, the Indian Naval Fund shall not be entitled to any sum on account of such freight; and in cases in which the loss may not amount to the whole of the freight money, the Indian Naval Fund shall be entitled only to its proportion of the balance of freight money over and above such loss or damage.

6. The captain or commanding officer of any ship or vessel on board of which treasure may have been received, shall, if under a commodore or senior officer, transmit to him a return, in the following form, of the amount of treasure and of the freight paid, or to be paid thereon; copies of this return are also to be furnished to the superintendent of the Indian navy, and to the secretary of the Indian Navy Fund, through the commodore or senior officer, if any; but if there be no commodore or senior officer on the station, they are then to be transmitted direct.

Manifest of Treasure shipped on board the Honourable Company's Ship

Mark and No.	German Crowns.	Piastres.	Shaeb Keroons.	Mahomed Shaw Rupees.	By whom Shipped.	Where.	On Account of whom.	To whom Consigned.	Where.	Amount of Freight.
	Note.—Should there be other coins than those enumerated in these columns, additional columns can be ruled for them.									

Date.

A. B., Commander.

7. When treasure shall during the voyage be transhipped into one or more ships or vessels, the freight shall be divided *pro rata itineris* among the commodores or senior officers, and the captains or commanding officers, according to the services performed by the different ships or vessels respectively.

8. The

8. The freight chargeable under the foregoing rules shall be payable clear of all deductions, and it shall be stipulated that the captains or commanding officers shall not be liable to any expense attending the shipment of treasure or any other articles until the same shall be safe and alongside their respective ships or vessels, and their liability shall cease from the moment they shall have landed the treasure at the port to which the ships carrying the treasure shall be destined. App. No. 20.

9. In order to prevent any doubt or misunderstanding as to the rate of distribution of freight on gold or silver, jewels or other articles received on board any of the Honourable Company's vessels, and to prevent any private arrangement inconsistent with these regulations, all commodores or senior officers, captains or commanding officers are expressly forbidden to receive on board any treasure upon any agreement or condition different from these regulations, or to take, demand or receive any sum other than those established by these regulations.

10. Should any dispute arise in the adjustment of freight to be charged on treasure, or should any case occur not provided for in these regulations, the subject is to be referred to Government, through the superintendent, whose decision is to be considered final.

By order of the Honourable the Governor in Council.

(signed) *P. M. Melvill*, Lieut.-Colonel,
Secretary to Government.

Bombay Castle, 12 Sept. 1843.

RULES for the Engagement of Passages and Accommodation of Passengers in the Government Steam Packets between *Bombay* and *Suez*.

1. APPLICATION for passage is to be made at the office of the master attendant in Bombay, and at the other ports to the commander.

2. The vessel which conveys the mail intended to reach Suez on the 19th of any month, is to be designated the steamer of that month; for instance, the January steamer is the one which is destined to reach Suez on the 19th January, although leaving Bombay possibly before the end of December.

3. Passengers are to be divided into two classes, viz. first class who sit at the commander's table, and entitled to all privileges of the quarter-deck. Second class, who are not entitled to walk aft of the paddle-boxes, whose berth is forward, can either arrange for their own provision, or mess with the warrant officers or engineers.

4. Every passenger of the first class shall pay the following sum, as table-money, for the voyage from Bombay to Suez, or from Suez to Bombay; viz.

	Rupees.
A lady or gentleman - - - - - -	200
A child ten years of age and above five years -	100
A child five years and above one - - -	80
A child one year and under - - - - -	50
Child under one year, and with the mother -	free.

These

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These rates apply to the steamers of every month throughout the year, with the exception of those of those of July and August, in which the table-money from Bombay to Suez will be as follows; viz.

	Rupees.
A lady or gentleman	300
A child under ten	150
A child under five	120
A child under one	75
Ditto, with the mother	free.

But the rate from Suez to Bombay will be the same in all months. It is to be understood that for the above sums the passengers are to be provided with a plain substantial table; but no person is entitled to more than one pint of wine and one bottle of beer per diem. Cabin passengers have the first choice of seats at the table, and after them the saloon passengers in preference to those on the deck, whose priority will be arranged according to their standing on the passage list. The seats will be arranged by the commander, and once taken they cannot be changed without his permission during the voyage.

5. In addition to the table-money, the following sums will be charged for the accommodation engaged by first-class passengers; viz.

	Rupees.
A treble cabin	1,000
A double cabin	800
A single cabin	500
A saloon berth	350
A deck passage	300

6. Every second-class passenger shall pay rupees 150.

7. For each European servant 50 rupees must be paid as subsistence money and 50 rupees as passage-money; for native servants the charge will be one-half the rate for an European; but none are to be considered and taken as servants unless they actually accompany their masters or mistresses.

8. Three lists for each month's steamer will be kept at the master attendant's office, viz. one for cabin passengers, and one for saloon, and one for deck passengers. A statement of the number of each class which each packet is calculated to accommodate will be open at the same place to the inspection of the public.

9. Every applicant may register his name in whichever of the lists he pleases, but the name of the packet will not be declared until ten days prior to the appointed day of sailing, when choice of accommodation will be given according to priority of standing on the lists; adies having the preference for the first three cabins.

10. In the event of a greater number of names having been registered than the steamer, when declared, is calculated to accommodate, the supernumerary names on the cabin lists may be transferred to that of the saloon or the deck, and those of saloon lists to that

that of the deck, or they may be withdrawn and the deposit repaid, at the option of the parties. In the case of a transfer under this rule, the name will be placed in the same position in which it would have stood by date of registry had the original application been for a saloon or a deck passage instead of a cabin, or for a deck instead of for a saloon. Should any of the cabin or saloon berths remain open after the vessel has left the harbour, the saloon or deck passengers may be allowed to take them on paying into the hands of the commander the regulated difference of price. App. No 20.

11. Ladies and children can take passages in cabins only, and female servants cannot be accommodated otherwise than in the cabin engaged for the family they accompany.

12. A passenger who has engaged a cabin may make what arrangement he likes for its occupation: he may either keep it entirely to himself or admit to share it with any one that he please, provided only that the name of the person so admitted (if an adult) must have been previously on one of the lists, and subject to the following restrictions; viz.

A treble cabin cannot be appropriated to the accommodation of more than four ladies; three gentlemen; six children; one lady and four children; two ladies and three children; three ladies and two children; one gentleman and three children; two gentlemen and two children; a lady and her husband with two children.

A double cabin cannot be appropriated to more than three ladies; two gentlemen; four children; a lady and three children; two ladies and two children; a gentleman with two children; a lady and her husband with one child.

A single cabin cannot be appropriated to more than two ladies; one gentleman; three children; one lady and two children.

Children under five years of age may be taken extra to the complement of a cabin, on payment of 50 rupees for each additional.

13. Passages for intermediate places can be engaged only when there is accommodation not taken up for the entire voyage, unless the parties are willing to pay the price of the whole voyage, in which case they may register their names in the same manner as all other passengers. The vacant accommodation will be declared three days before the sailing of the vessel. The passage between Aden and Mocha, and Bombay and Suez respectively, will be counted as one-half of the whole passage between Bombay and Suez; between Judda and Suez will be counted as one-third, and between Judda and Bombay as two-thirds. Cosseir and Suez are considered to be alike.

14. The engagement of a passage will not be considered valid unless a deposit of the following sums be made at the time of application; viz.

	Rupees.
For a cabin passage - - - - -	300
For a saloon ditto - - - - -	150
For a deck ditto - - - - -	125

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This deposit, should the party not proceed, will invariably be forfeited, except under the provisions of Art. 10, and in cases where by the production of a medical certificate it is satisfactorily shown that the person was compelled by sickness to abandon the passage. A deposit is not required on the registry of the names of children, except when the children are to occupy a cabin by themselves, in which case the same deposit must be made as for the cabin passage of a lady or a gentleman, viz. 300 rupees.

15. To prevent unnecessary trouble, the master attendant is authorised to receive and pass receipts for the deposit money.

16. Ten days prior to the appointed day of sailing, each passenger must pay to the master attendant, the remaining portion of the passage-money, in default of which the deposit will be considered forfeited, and any claim to passage invalid. When the cabins are finally allotted an adjustment will be made with the party or parties to whom they are appropriated, the difference between the value of the place occupied by each individual and the deposit made under Article 14 being paid up or returned, as the case may be. When the passage-money has been paid up, no portion of it can, on any plea, be returned, except under the provisions specified in Article 14.

17. Persons who, from non-arrival at Bombay, may have omitted to pay the balance of the passage-money, may be re-admitted as passengers, if before the period of departure the balance is paid. They, however, will be placed at the bottom of the list of the class of passengers in which they are registered.

18. No transfer of accommodation in the steamers by an individual who has taken a passage, to one who has not taken his passage, will be permitted; but after the list has been filled up, any person wishing to stand the chance of succeeding to a vacancy caused by a lapse of any kind, may do so by registering his name, and paying the required sum, which will be refunded to him should no vacancy occur.

19. It is to be understood, that Government reserves to itself the right of appropriating a cabin or cabins, for the use of public functionaries or others proceeding on duty or by special order of Government as passengers in any of the Honourable Company's steamers.

20. Passengers on a steamer that may from accident or other cause be obliged to return to port, will be entitled to the refund of the amount that has been paid, deducting therefrom a sum for the table allowance of the commander, according to the number of days that the vessel may have been at sea, calculating the average time occupied in a voyage to or from Suez to be 18 days, and Aden 10 days.

21. It is necessary for passengers not belonging to the Honourable Company's service to make the requisite arrangements at Suez, or other intermediate ports, with the commander, before or at least at the time of their embarkation, for the payment of the passage-money.

22. For

22. For the convenience of passengers from the Red Sea to India, the commanders of the Honourable Company's packets are authorised to receive payment of passage-money at Suez, or pay the passage-money between Suez and Bombay, in sovereigns, Spanish dollars, or German crowns, at the following rates of exchange; viz.

Sovereigns, at ten rupees each; Spanish dollars, at two rupees and three annas each; German crowns, at two rupees and two annas each.

23. The baggage of each passenger must not exceed four boxes of the following dimensions; viz.

Length - - - -	3 feet 5 inches.
Breadth - - - -	1 foot 5 inches.
Depth - - - -	1 foot 3 inches.

And the total weight must not be more than four cwt. Second-class passengers are allowed half the above quantity.

24. Each cabin passenger may, if he pleases, put all his baggage into his cabin. The saloon and deck passengers will be allowed to keep one box or bag above. The rest of the baggage to be in the baggage room, and passengers will be allowed access to it twice a week, on a day and hour fixed by the commander, who will appoint a person to have charge of the baggage.

25. Any applicant may be refused a passage without any cause being assigned, either by the authorities at Bombay, or by the commander of the vessel when away from Bombay; but a report of the rejection is to be communicated to Government.

26. All persons who take passage, either themselves or through their agents, will be considered as thereby binding themselves to comply with these rules, which will be shown by the master attendant or by the commander of the vessel to parties who engage a passage.

By order of the Honourable the Governor in Council.

(signed) *P. M. Melvill,* Lieut.-Colonel,
Secretary to Government.

Bombay Castle, 12 Sept. 1843.

Marine Department, East India House,
19 May 1851. *J. C. Mason.*

STATEMENT of all MONEY expended by the East India Company in their Naval Yards, Docks, and Establishments at the Port of *Bombay*, since 1st January 1840; (converted into Sterling at the established rate of 2*s.* per Sicca Rupee).

	1 Jan. to 20 April 1840 (4 months).	1840–41. 1 May 1840 to 30 April 1841.	1841–42. 1 May 1841 to 30 April 1842.	1842–43. 1 May 1842 to 30 April 1843.	1843–44. 1 May 1843 to 30 April 1844.	1844–45. 1 May 1844 to 30 April 1845.	1845–46. 1 May 1845 to 30 April 1846.	1846–47. 1 May 1846 to 30 April 1847.	1847–48. 1 May 1847 to 30 April 1848.	1848–49. 1 May 1848 to 30 April 1849. *	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
Construction of buildings and other works connected with the naval yards, docks, &c.	1,548	18,127	19,738	15,385	12,142	12,657	7,995	5,967	6,514	6,308	106,381
Repairs to ditto, including assessment on the Bombay and Mazagon docks, and officers' houses, &c.	2,132	1,652	1,454	1,927	5,247	4,686	4,215	2,909	2,423	1,110	27,755
	3,680	19,779	21,192	17,312	17,389	17,343	12,210	8,876	8,937	7,418	134,136
Naval Establishments at the Port of Bombay: comprising the superintendent of the Indian navy, and his office; the Navy Pay Office; the Master Attendant's Department, including Lighthouse and Pilot Establishment; the master builder and assistant, engineers, inspectors of machinery, including artificers of the Steam Department working on shore; master sailmaker, storekeeper, draughtsmen, dockyard police, labourers, &c. &c.	11,782	38,830	47,530	49,561	55,579	57,362	54,210	52,931	55,151	56,855	479,791
£.	15,462	58,609	68,722	66,873	72,968	74,705	66,420	61,807	64,088	64,273	613,927

* The latest period to which the accounts from Bombay have been received.

(Errors excepted.)

East India House, 19 May 1851.

James C. Melvill, Secretary.

STATEMENT of the Total Annual Cost to the INDIAN EXCHEQUER of the Postal Part of the INDIAN NAVY, from 1839-40 to 1848-49, the latest Period to which the Accounts from *Bombay* have been received.

	1839-40.	1840-41.	1841-42.	1842-43.	1843-44.	1844-45.	1845-46. *	1846-47.	1847-48.	1848-49.
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
Cost of repairs, stores and coals; also wages and provisions of the officers and crews of vessels, while employed conveying the mails between Bombay and Suez, and Bombay and Aden	61,721	59,303	55,897	60,019	56,418	69,038	82,933	89,453	85,542	93,173
Deduct freight and passage-money received; less amount of table-money paid to commanders	17,414	19,376	29,026	28,676	27,435	26,307	24,283	28,341	21,509	18,990
Net actual charge in India of the postal part of the Indian Navy	44,307	39,927	26,871	31,343	28,983	42,731	58,650	61,112	64,033	74,183
If there be added a charge of five per cent. for depreciation; six per cent. for sea risk in lieu of premium of insurance, and four per cent. interest per annum	21,773	29,075	19,746	31,390	22,680	29,539	36,257	44,104	41,476	46,830
The net charge would be increased to £.	66,080	69,002	46,617	62,733	51,663	72,270	94,907	105,216	105,509	121,013

* Her Majesty's Government having entered into a contract, at the joint expense of the public and of the East India Company, for a second monthly communication between England and Calcutta and Madras, without including a branch to Bombay, the Bombay Government determined to supply this deficiency, by sending a vessel of the Indian Navy monthly to Aden, to convey and receive the Bombay portion of the mails. This arrangement, which is at the sole expense of the East India Company, causes, in great measure, the increase of charge apparent in this and succeeding years.

Note.—The expenses incurred in Egypt and at Malta connected with the transmission of the mails are not included in the above statement, as they do not form any part of the charge for the Indian Navy; they amounted in the period embraced in this account as follows:—

	£.		£.		£.
1839-40	13,069	1843-44	9,800	1846-47	15,700
1840-41	7,837	1844-45	13,200	1847-48	18,276
1841-42	13,740	1845-46	16,200	1848-49	17,770
1842-43	13,200				

The amount paid by Her Majesty's Government to the East India Company in respect of Steam Communication with India is at the rate of 50,000 *l.* per annum.

East India House,
19 May 1851.

(Errors excepted.)

James C. Melvill,
Secretary.

App. No. 20.

RETURN of the Total Annual POSTAL MILEAGE performed by the STEAM VESSELS of the Indian Navy, employed on the *Bombay* Mail Line.

In the North-east Monsoon.

	Nautical Miles.		
From Bombay to Aden -	1,680		
From Aden to Suez - -	1,320		
		3,000	
From Suez to Aden - -	1,320		
From Aden to Bombay -	1,800		
		3,120	
		6,120	each month.
The same during eight months - -		8	
Total Nautical Miles - - -		48,960	

In the South-west Monsoon.

	Nautical miles.		
From Bombay to Aden -	2,400		
From Aden to Suez - -	1,320		
		3,720	
From Suez to Aden - -	1,320		
From Aden to Bombay -	1,680		
		3,000	
		6,720	each month.
The same during four months - - -		4	
Total Nautical Miles - - -		26,880	

	Nautical Miles.
Postal mileage performed during the north-east monsoon -	48,960
Ditto - ditto - during the south-west monsoon -	26,880
Total Postal Mileage in the 12 Voyages per Annum	75,840

The distance between Bombay and Suez has been called, in round numbers, 3,000 miles, which, with the back passages, would make a total of 72,000 miles per annum; but the sea mileage traversed varies very considerably with the season of the year or monsoons. The distances above stated are those ordinarily described in the passages made from place to place during each monsoon.

Note (A.)—In addition to the above, the vessels of the Indian navy perform 12 voyages in each year between Bombay and Aden without charge to the Crown, for the express purpose of connecting with Bombay

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